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- (75) Inventors/Applicants (for US only): ROSEN, Craig, A. [US/US]; 22400 Rolling Hill Lane, Laytonsville, (88) Date of publication of the international search report: MD 20882 (US). RUBEN, Steven; M. [US/US], 18528. Heritage Hills Drive, Olney, MD 20832 (US).
- (74) Agent: HOOVER, Kenley, K.; Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850 (US).

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(54) Title: HUMAN SECRETED PROTEINS

(57) Abstract: The present invention relates to human secreted polypeptides, and isolated nucleic acid molecules encoding said polypeptides, useful for diagnosing and treating immune disorders and diseases. Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

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INTERNATIONAL SEARCH REPORT

International application No. PCT/US02/08278

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) :A01N 57/18; C07K 1/00; C07H 21/02.												
US CL	: 514/2; 530/350; 536/23.1.											
According t	to International Patent Classification (IPC) or to both	national classification and IPC										
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U.S. :	514/2; 550/350; 596/23.1.											
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Electronic o	data base consulted during the international search (r	ame of data base and, where practicable	e, search terms used)									
	l; N_GeneSeq; Issued_Patents.											
C. DOC	CUMENTS CONSIDERED TO BE RELEVANT											
Category*	Citation of document, with indication, where ap	propriate, of the relevant passages	Relevant to claim No.									
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"O" de	colal reason (as specified) comment referring to an oral disciosure, use, exhibition or other anns	considered to involve an inventive step with one or more other such doon:	when the document is combined									
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06 FEBR	UARY 2003	ification (IPC) or to both national classification and IPC ification system followed by classification symbols) itimum documentation to the extent that such documents are included in the fields itimum documentation of the extent that such documents are included in the fields it international search (name of data base and, where practicable, search terms used) is. TO BE RELEVANT With indication, where appropriate, of the relevant passages Relevant to claim No. Sanger Centre, Hinxton, UK, No. AL445590, Pearce, A., 27 November 2000. 1-4 and 13-18 Pearce, A., 27 November 2000. The art which is not considered the international filing date or priority date, and not to centifie with the application but exist to undenstand the priority data (and not for example to considered to involve as invantive step when the documents or other which is not considered to involve as invantive step when the document is conducted with one or arms when such documents will comment as one the considered to involve as invantive step when the document is conducted with constant and comments, such comments of the same patent family remained as a new formational search in the first of the same patent family and the priority data in a such constant of the same patent family and the priority data in the same patent family and the priority data in the same patent family and the priority data in the same patent family and the priority data in the priority data in the priority data in the patent family and the priority data in the patent family and the priority data in the priority data in the priority data in the patent family and the priority data in the priority data in the patent family and the priority data in the priority data in the patent family and the priority data in the patent family and the patent family and the priority data in the patent family and the priority data in the patent family and the priority data in the patent family and										
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Form PCT/ISA/210 (second sheet) (July 1998)*

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INTERNATIONAL SEARCH REPORT

International application No. PCT/US02/08278

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
S. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
Please See Extra Sheet.
William William The Control of the C
1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. X No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-4 and 13-18 (SEQ ID NO: 11, 908)
Remark on Protest The additional search fees were accompanied by the applicant's protest.
No protest accompanied the payment of additional search fees.

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INTERNATIONAL SEARCH REPORT

International application No. PCT/US02/08278

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Groups 1-897, claim(s) 1-4 and 13-18, all in part, drawn to a polypeptide of SEQ ID NO: Y, wherein Y correlates to one of those listed in Table 1A, and corresponds to one of the cDNA clone IDs respectively. For example, If Group 1 is elected, this correlates to Gene No. 1, cDNA clone ID H2CBG48 of Table 1A, wherein Y is 908. If Group 2 is elected, this correlates to Gene No. 2, cDNA clone ID H2MAC30, wherein Y is 909.

*The remaining groups will not be listed.

Groups 898-1794, claim(s) 5-6 and 19-20, all in part, drawn to an antibody that binds to a protein with SEQ ID NO: Y, wherein Y correlates to one of those listed in Table 1A, and corresponds to one of the cDNA clone IDs respectively. For example.

If Group 898 is elected, this correlates to Gene No. 1, cDNA clone ID H2CBG48 of Table 1A, wherein Y is 908. If Group 899 is elected, this correlates to Gene No. 2, cDNA clone ID H2MAC30, wherein Y is 909.

*The remaining groups will not be listed.

Groups 1785-2691, claim(s) 18, all in part, drawn to a nucleic acid of SEQ ID NO: X or a peptide of SEQ ID NO: Y, wherein X and Y are values that correlate to one of those listed in Table 1A, and corresponds to one of the cDNA clone IDs respectively. For example,

If Group 1795 is elected, this correlates to Gene No. 1, cDNA clone ID H9CBG48 of Table 1A, wherein X is 11 and Y is 908.

If Group 1796 is elected, this correlates to Gene No. 2, cDNA clone ID H2MAC30, wherein X is 12 and Y is 909. *The remaining groups will not be listed.

Groups 2692-3598, claim(s) 11-12, all in part, drawn to an an agonist/antagonist of SEQ ID NO: Y, wherein Y correlates to one of those listed in Table 1A, and corresponds to one of the cDNA clone IDs respectively. For example, If Group 2692 is elected, this correlates to Gene No. 1, cDNA clone ID H2CBG48 of Table 1A, wherein Y is 908. If Group 2693 is elected, this correlates to Gene No. 2, cDNA clone ID H2MAC30, wherein Y is 909.

*The remaining groups will not be listed.

The inventions listed as Groups 1-3598 do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The polynucleotides and polypeptides of each invention are unrelated, each to the other because Pearce (Accession No. AL445590, 200) teaches the DNA set forth in SEQ ID NO: 11. Thus the technical feature of the polynucleotide sequence is not special and the groups are not so linked under PCT Rule 13.1. Additionally, the claimed methods produce different products and/or different results which are not coextensive and which do not share the same technical feature.

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- (75) Inventors/Applicants (for US only): ROSEN, Craig, A. [US/US]; 22400 Rolling Hill Lane, Laytonsville, MD 20882 (US). RUBEN, Steven, M. [US/US]; 18528 Heritage Hills Drive, Olney, MD 20832 (US).
- (74) Agent: HOOVER, Kenley, K.; Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850 (US).

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A2

(54) Title: HUMAN SECRETED PROTEINS

(57) Abstract: The present invention relates to human secreted polypeptides, and isolated nucleic acid molecules encoding said polypeptides, useful for diagnosing and treating immune disorders and diseases. Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

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Human Secreted Proteins

Field of the Invention

The present invention relates to human secreted proteins/polypeptides, and isolated nucleic acid molecules encoding said proteins/polypeptides, useful for detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating immune disorders and diseases. Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

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Background of the Invention

The immune system is an intricate network of cells, tissues and soluble molecules that function to protect the body from invasion by foreign substances and pathogens. The major cells of the immune system are lymphocytes, including B cells and T cells, and myeloid cells, including basophils, eosinophils, neutrophils, mast cells, monocytes, macrophages and dendritic cells. In addition to these cellular components of the immune system, soluble molecules- such as antibodies, complement proteins, and cytokines- circulate in lymph and blood plasma, and play important roles in immunity.

The immune system can be subdivided into the acquired and innate immune systems. The cells of the innate immune system (e.g., neutrophils, eosinophils, basophils, mast cells) are not antigen specific and their action is not enhanced by repeated exposure to the same antigen. The cells of the acquired immune system (B and T cells) are antigen specific. Repeated exposure of B and T cells to an antigen results in improved immune responses (memory responses) produced by these cell types. The cells and products of the acquired immune system can recruit components of the innate system to mount a focused immune response. For a more extensive review of the immune system, see <u>Fundamental Immunology</u>, 4th edition, Ed. William Paul, Lippincott-Raven Pub. (1998).

An immune response is seldom carried out by a single cell type, but rather requires the coordinated efforts of several cell types. In order to coordinate an immune response, it is necessary that cells of the immune system communicate with each other and with other cells of the body. Communication between cells may be made by cell-cell contact, between membrane bound molecules on each cell, or by the interaction of soluble components of the immune system with

cellular receptors. Signaling between cell types may have one or more of a variety of consequences, including activation, proliferation, differentiation, and apoptosis. Activation and differentiation of immune cells may result in the expression or secretion of polypeptides, or other molecules, which in turn affect the function of other cells and/or molecules of the immune system.

Molecules which stimulate or suppress immune system function are known as immunomodulators. These molecules, which include endogenous proteins (e.g., cytokines, cytokine receptors, and intracellular signal transduction molecules), molecules derived from microorganisms, and synthetic agents, may exert their modulatory effects at one or more stages of the immune response, such as antigen recognition, stimulation of cytokine production and release, and/or activation/differentiation of lymphocytes and myeloid cells. Immunomodulators may enhance (immunoprophylaxis, immunostimulation), restore (immunosubstitution, immunorestoration) or suppress (immunosuppression, immunodeviation) immunological functions or activities.

Immunomodulatory compounds have many important applications in clinical practice. For example, immunosuppressing agents (which attenuate or prevent unwanted immune responses) can be used to prevent tissue rejection during organ transplantation, to prevent Rh hemolytic disease of the newborn, or to treat autoimmune disorders. A mechanism of action common to many immunosuppressants is the inhibition of T cell activation and/or differentiation. Antilymphocyte antibodies have also been used to attenuate immune system functions. Currently-used immunosuppressive agents can produce a number of side effects which limit their use. Among the most serious secondary effects include kidney and liver toxicity, increased risk of infection, hyperglycemia, neoplasia, and osteoporosis (see, e.g., Freeman, Clin. Biochem. 24(1):9-14 (1991); Mitchison, Dig. Dis.11(2):78-101 (1993)).

Immunostimulants, which enhance the activity of immune cells and molecules, comprise another class of immunomodulatory agents with important clinical applications. Such applications include, for example, the treatment of immunodeficiency disorders (e.g. AIDS and severe combined immunodeficiency), chronic infectious diseases (e.g. viral hepatitis, papillomavirus, and herpesvirus), and cancer. An important class of endogenous immunostimulants is the cytokines. These soluble signaling molecules are produced by a number of cell types, and are critical to the regulation of the immune response. Immunostimulatory mechanisms can include proliferation, differentiation and/or activation of immune cells or progenitors of immune cells. For example, interleukin-2 (IL-2) binds to IL-2 receptors on T lymphocytes and induces proliferation and differentiation. Another cytokine, interferon alpha, stimulates the immune system through a variety of mechanisms, including activation of macrophages, T lymphocytes, and natural killer cells. Interferon alpha also induces the expression of antiviral proteins (see Chapter 50, The Pharmacological Basis of Therapeutics, 9th Edition, Eds.

Hardman, Limbird, Molinoff, Ruddon, and Gilman, McGraw Hill (1996)). Limitations of current immunostimulant therapies include anaphylaxis, pulmonary edema, and renal toxicity, to name a few.

The discovery of new human immune related polynucleotides, the polypeptides encoded by them, and antibodies that immunospecifically bind these polypeptides, satisfies a need in the art by providing new compositions which are useful in the diagnosis, treatment, prevention and/or prognosis of disorders of the immune system, including, but not limited to, autoimmune disorders (e.g., systemic lupus erythematosus, rheumatoid arthritis, idiopathic thrombocytopenic purpura and multiple sclerosis), immunodeficiencies (e.g., X-linked agammaglobulinemia, severe combined immunodeficiency, Wiskott-Aldrich syndrome, and ataxia telangiectasia), chronic infections (e.g., HIV, viral hepatitis, and herpesvirus), and neoplastic disorders. See, e.g. "Immune Activity" section infra. Additionally, immune related molecules would be useful as agents to boost immune responsiveness to pathogens or to suppress immune reactions, for example as is necessary in conjunction with organ transplantation.

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Summary of the Invention

The present invention encompasses human secreted proteins/polypeptides, and isolated nucleic acid molecules encoding said proteins/polypeptides, useful for detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating immune disorders and diseases. Antibodies that bind these polypeptides are also encompassed by the present invention; as are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention also encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

Detailed Description

Polynucleotides and Polypeptides of the Invention

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Description of Table 1A

Table 1A summarizes information concerning certain polypnucleotides and polypeptides of the invention. The first column provides the gene number in the application for each clone identifier. The second column provides a unique clone identifier, "Clone ID:", for a cDNA clone related to each contig sequence disclosed in Table 1A. Third column, the cDNA Clones identified in the second column were deposited as indicated in the third column (i.e. by

ATCC Deposit No:Z and deposit date). Some of the deposits contain multiple different clones corresponding to the same gene. In the fourth column, "Vector" refers to the type of vector contained in the corresponding cDNA Clone identified in the second column. In the fifth column, the nucleotide sequence identified as "NT SEQ ID NO:X" was assembled from partially homologous ("overlapping") sequences obtained from the corresponding cDNA clone identified in the second column and, in some cases, from additional related cDNA clones. The overlapping sequences were assembled into a single contiguous sequence of high redundancy (usually three to five overlapping sequences at each nucleotide position), resulting in a final sequence identified as SEQ ID NO:X. In the sixth column, "Total NT Seq." refers to the total number of nucleotides in the contig sequence identified as SEQ ID NO:X." The deposited clone may contain all or most of these sequences, reflected by the nucleotide position indicated as "5' NT of Clone Seq." (seventh column) and the "3' NT of Clone Seq." (eighth column) of SEQ ID NO:X. In the ninth column, the nucleotide position of SEQ ID NO:X of the putative start codon (methionine) is identified as "5' NT of Start Codon." Similarly, in column ten, the nucleotide position of SEQ ID NO:X of the predicted signal sequence is identified as "5' NT of First AA of Signal Pep." In the eleventh column, the translated amino acid sequence, beginning with the methionine, is identified as "AA SEQ ID NO:Y," although other reading frames can also be routinely translated using known molecular biology techniques. The polypeptides produced by these alternative open reading frames are specifically contemplated by the present invention.

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In the twelfth and thirteenth columns of Table 1A, the first and last amino acid position of SEQ ID NO:Y of the predicted signal peptide is identified as "First AA of Sig Pep" and "Last AA of Sig Pep." In the fourteenth column, the predicted first amino acid position of SEQ ID NO:Y of the secreted portion is identified as "Predicted First AA of Secreted Portion". The amino acid position of SEQ ID NO:Y of the last amino acid encoded by the open reading frame is identified in the fifteenth column as "Last AA of ORF".

SEQ ID NO:X (where X may be any of the polynucleotide sequences disclosed in the sequence listing) and the translated SEQ ID NO:Y (where Y may be any of the polypeptide sequences disclosed in the sequence listing) are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, SEQ ID NO:X is useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in the deposited clone. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used, for example, to generate antibodies which bind specifically to proteins containing the polypeptides and the secreted proteins encoded by the cDNA clones identified in Table 1A and/or elsewhere herein

Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

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Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and the predicted translated amino acid sequence identified as SEQ ID NO:Y, but also a sample of plasmid DNA containing a human cDNA of the invention deposited with the ATCC, as set forth in Table 1A. The nucleotide sequence of each deposited plasmid can readily be determined by sequencing the deposited plasmid in accordance with known methods

The predicted amino acid sequence can then be verified from such deposits. Moreover, the amino acid sequence of the protein encoded by a particular plasmid can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence.

Also provided in Table 1A is the name of the vector which contains the cDNA plasmid. Each vector is routinely used in the art. The following additional information is provided for convenience.

Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128, 256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. et al., Nucleic Acids Res. 16:7583-7600 (1988); Alting-Mees, M. A. and Short, J. M., Nucleic Acids Res. 17:9494 (1989)) and pBK (Alting-Mees, M. A. et al., Strategies 5:58-61 (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into E. coli strain XL-1 Blue, also available from Stratagene

Vectors pSport1, pCMVSport 1.0, pCMVSport 2.0 and pCMVSport 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., et al., *Focus 15:59* (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR[®]2.1, which is

available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res.* 16:9677-9686 (1988) and Mead, D. et al., Bio/Technology 9: (1991).

The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or a deposited cDNA (cDNA Clone ID). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include, but are not limited to, preparing probes or primers from the disclosed sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

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Also provided in the present invention are allelic variants, orthologs, and/or species homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of genes corresponding to SEQ ID NO:X and SEQ ID NO:Y using information from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X and/or a cDNA contained in ATCC Deposit No.Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, and/or a polypeptide encoded by a cDNA contained in ATCC deposit No.Z. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X and/or a polypeptide encoded by the cDNA contained in ATCC Deposit No.Z, are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the complement of the coding strand of the cDNA contained in ATCC Deposit No.Z.

Description of Table 1B (Comprised of Tables 1B.1 and 1B.2)

Table 1B.1 and Table 1B.2 summarize some of the polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID:), contig sequences (contig identifier (Contig ID:) and contig nucleotide sequence identifiers (SEQ ID NO:X)) and further summarizes certain characteristics of these polynucleotides and the polypeptides encoded thereby. The first column of Tables 1B.1 and 1B.2 provide the gene numbers in the application for each clone identifier. The second column of Tables 1B.1 and 1B.2 provide unique clone

identifiers, "Clone ID:", for cDNA clones related to each contig sequence disclosed in Table 1A and/or Table 1B. The third column of Tables 1B.1 and 1B.2 provide unique contig identifiers, "Contig ID:" for each of the contig sequences disclosed in these tables. The fourth column of Tables 1B.1 and 1B.2 provide the sequence identifiers, "SEQ ID NO:X", for each of the contig sequences disclosed in Table 1A and/or 1B.

Table 1B.1

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The fifth column of Table 1B.1, "ORF (From-To)", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:X that delineates the preferred open reading frame (ORF) that encodes the amino acid sequence shown in the sequence listing and referenced in Table 1B.1 as SEQ ID NO:Y (column 6). Column 7 of Table 1B.1 lists residues comprising predicted epitopes contained in the polypeptides encoded by each of the preferred ORFs (SEQ ID NO:Y). Identification of potential immunogenic regions was performed according to the method of Jameson and Wolf (CABIOS, 4; 181-186 (1988)); specifically, the Genetics Computer Group (GCG) implementation of this algorithm, embodied in the program PEPTIDESTRUCTURE (Wisconsin Package v10.0, Genetics Computer Group (GCG), Madison, Wisc.). This method returns a measure of the probability that a given residue is found on the surface of the protein. Regions where the antigenic index score is greater than 0.9 over at least 6 amino acids are indicated in Table 1B.1 as "Predicted Epitopes". In particular embodiments, polypeptides of the invention comprise, or alternatively consist of, one, two, three, four, five or more of the predicted epitopes described in Table 1B.1. It will be appreciated that depending on the analytical criteria used to predict antigenic determinants, the exact address of the determinant may vary slightly. Column 8 of Table 1B.1 ("Cytologic Band") provides the chromosomal location of polynucleotides corresponding to SEQ ID NO:X. Chromosomal location was determined by finding exact matches to EST and cDNA sequences contained in the NCBI (National Center for Biotechnology Information) UniGene database. Given a presumptive chromosomal location, disease locus association was determined by comparison with the Morbid Map, derived from Online Mendelian Inheritance in Man (Online Mendelian Inheritance in Man, OMIM™. McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine (Bethesda, MD) 2000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). If the putative chromosomal location of the Query overlaps with the chromosomal location of a Morbid Map entry, an OMIM identification number is disclosed in Table 1B.1, column 9 labeled "OMIM Disease Reference(s)". A key to the OMIM reference identification numbers is provided in Table 5.

Table 1B.2

Column 5 of Table 1B.2, "Tissue Distribution" shows the expression profile of tissue, cells, and/or cell line libraries which express the polynucleotides of the invention. The first code number shown in Table 1B.2 column 5 (preceding the colon), represents the tissue/cell source identifier code corresponding to the key provided in Table 4. Expression of these polynucleotides was not observed in the other tissues and/or cell libraries tested. The second number in column 5 (following the colon), represents the number of times a sequence corresponding to the reference polynucleotide sequence (e.g., SEQ ID NO:X) was identified in the corresponding tissue/cell source. Those tissue/cell source identifier codes in which the first two letters are "AR" designate information generated using DNA array technology. Utilizing this technology, cDNAs were amplified by PCR and then transferred, in duplicate, onto the array. Gene expression was assayed through hybridization of first strand cDNA probes to the DNA array. cDNA probes were generated from total RNA extracted from a variety of different tissues and cell lines. Probe synthesis was performed in the presence of 33P dCTP, using oligo(dT) to prime reverse transcription. After hybridization, high stringency washing conditions were employed to remove non-specific hybrids from the array. The remaining signal, emanating from each gene target, was measured using a Phosphorimager. Gene expression was reported as Phosphor Stimulating Luminescence (PSL) which reflects the level of phosphor signal generated from the probe hybridized to each of the gene targets represented on the array. A local background signal subtraction was performed before the total signal generated from each array was used to normalize gene expression between the different hybridizations. The value presented after "[array code]:" represents the mean of the duplicate values, following background subtraction and probe normalization. One of skill in the art could routinely use this information to identify normal and/or diseased tissue(s) which show a predominant expression pattern of the corresponding polynucleotide of the invention or to identify polynucleotides which show predominant and/or specific tissue and/or cell expression.

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Description of Table 1C

Table 1C summarizes additional polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID:), contig sequences (contig identifier (Contig ID:) contig nucleotide sequence identifiers (SEQ ID NO:X)), and genomic sequences (SEQ ID NO:B). The first column provides a unique clone identifier, "Clone ID:", for a cDNA clone related to each contig sequence. The second column provides the sequence identifier, "SEQ ID NO:X", for each contig sequence. The third column provides a unique contig identifier, "Contig ID:" for each contig sequence. The fourth column, provides a BAC identifier "BAC ID NO:A" for the BAC clone referenced in the corresponding row of the table. The fifth column provides the nucleotide sequence identifier, "SEQ ID NO:B" for a fragment of the BAC clone identified in column four of the corresponding row of the table. The sixth column, "Exon From-To", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence

of SEQ ID NO:B which delineate certain polynucleotides of the invention that are also exemplary members of polynucleotide sequences that encode polypeptides of the invention (e.g., polypeptides containing amino acid sequences encoded by the polynucleotide sequences delineated in column six, and fragments and variants thereof).

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Description of Table 1D

Table 1D: In preferred embodiments, the present invention encompasses a method of detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating immune diseases or disorders; comprising administering to a patient in which such treatment, prevention, or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) represented by Table 1A, Table 1B, and Table 1C, in an amount effective to detect, prevent, diagnose, prognosticate, treat, and/or ameliorate the disease or disorder.

As indicated in Table 1D, the polynucleotides, polypeptides, agonists, or antagonists of the present invention (including antibodies) can be used in assays to test for one or more biological activities. If these polynucleotides and polypeptides do exhibit activity in a particular assay, it is likely that these molecules may be involved in the diseases associated with the biological activity. Thus, the polynucleotides or polypeptides, or agonists or antagonists thereof (including antibodies) could be used to treat the associated disease.

Table 1D provides information related to biological activities for polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof). Table 1D also provides information related to assays which may be used to test polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) for the corresponding biological activities. The first column ("Gene No.") provides the gene number in the application for each clone identifier. The second column ("cDNA Clone ID:") provides the unique clone identifier for each clone as previously described and indicated in Tables 1A, 1B, and 1C. The third column ("AA SEQ ID NO:Y") indicates the Sequence Listing SEQ ID Number for polypeptide sequences encoded by the corresponding cDNA clones (also as indicated in Tables 1A, 1B, and 2). The fourth column ("Biological Activity") indicates a biological activity corresponding to the indicated polypeptides (or polynucleotides encoding said polypeptides). The fifth column ("Exemplary Activity Assay") further describes the corresponding biological activity and provides information pertaining to the various types of assays which may be performed to test, demonstrate, or quantify the corresponding biological activity. Table 1D describes the use of FMAT technology, inter alia, for testing or demonstrating various biological activities. Fluorometric microvolume assay technology (FMAT) is a fluorescence-based system that provides a means to perform nonradioactive cell- and bead-based assays to detect activation of cell signal transduction pathways. This technology was designed specifically for ligand binding and immunological assays. Using this technology, fluorescent cells or beads at the bottom of the well

unbound flurophore comprising the background signal is ignored, allowing for a wide variety of homogeneous assays. FMAT technology may be used for peptide ligand binding assays, immunofluorescence, apoptosis, cytotoxicity, and bead-based immunocapture assays. See, Miraglia S et. al., "Homogeneous cell and bead based assays for highthroughput screening using flourometric microvolume assay technology," Journal of Biomolecular Screening; 4:193-204 (1999). In particular, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides (including polypeptide fragments and variants) to activate signal transduction pathways. For example, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides to upregulate production of immunomodulatory proteins (such as, for example, interleukins, GM-CSF, Rantes, and Tumor Necrosis factors, as well as other cellular regulators (e.g. insulin)).

Table 1D also describes the use of kinase assays for testing, demonstrating, or quantifying biological activity. In this regard, the phosphorylation and de-phosphorylation of specific amino acid residues (e.g. Tyrosine, Serine, Threonine) on cell-signal transduction proteins provides a fast, reversible means for activation and de-activation of cellular signal transduction pathways. Moreover, cell signal transduction via phosphorylation/de-phosphorylation is crucial to the regulation of a wide variety of cellular processes (e.g. proliferation, differentiation, migration, apoptosis, etc.). Accordingly, kinase assays provide a powerful tool useful for testing, confirming, and/or identifying polypeptides (including polypeptide fragments and variants) that mediate cell signal transduction events via protein phosphorylation. See e.g., Forrer, P., Tamaskovic R., and Jaussi, R. "Enzyme-Linked Immunosorbent Assay for Measurement of JNK, ERK, and p38 Kinase Activities" Biol. Chem. 379(8-9): 1101-1110 (1998).

25 Description of Table 1E

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Polynucleotides encoding polypeptides of the present invention can be used in assays to test for one or more biological activities. One such biological activity which may be tested includes the ability of polynucleotides and polypeptides of the invention to stimulate up-regulation or down-regulation of expression of particular genes and proteins. Hence, if polynucleotides and polypeptides of the present invention exhibit activity in altering particular gene and protein expression patterns, it is likely that these polynucleotides and polypeptides of the present invention may be involved in, or capable of effecting changes in, diseases associated with the altered gene and protein expression profiles. Hence, polynucleotides, polypeptides, or antibodies of the present invention could be used to treat said associated diseases.

TaqMan® assays may be performed to assess the ability of polynucleotides (and polypeptides they encode) to alter the expression pattern of particular "target" genes. TaqMan®

reactions are performed to evaluate the ability of a test agent to induce or repress expression of specific genes in different cell types. TaqMan® gene expression quantification assays ("TaqMan® assays") are well known to, and routinely performed by, those of ordinary skill in the art. TaqMan® assays are performed in a two step reverse transcription / polymerase chain reaction (RT-PCR). In the first (RT) step, cDNA is reverse transcribed from total RNA samples using random hexamer primers. In the second (PCR) step, PCR products are synthesized from the cDNA using gene specific primers.

To quantify gene expression the Taqman® PCR reaction exploits the 5' nuclease activity of AmpliTaq Gold® DNA Polymerase to cleave a Taqman® probe (distinct from the primers) during PCR. The Taqman® probe contains a reporter dye at the 5'-end of the probe and a quencher dye at the 3' end of the probe. When the probe is intact, the proximity of the reporter dye to the quencher dye results in suppression of the reporter fluorescence. During PCR, if the target of interest is present, the probe specifically anneals between the forward and reverse primer sites. AmpliTaq Fold DNA Polymerase then cleaves the probe between the reporter and quencher when the probe hybridizes to the target, resulting in increased fluorescence of the reporter (see Figure 2). Accumulation of PCR products is detected directly by monitoring the increase in fluorescence of the reporter dye.

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After the probe fragments are displaced from the target, polymerization of the strand continues. The 3'-end of the probe is blocked to prevent extension of the probe during PCR. This process occurs in every cycle and does not interfere with the exponential accumulation of product. The increase in fluorescence signal is detected only if the target sequence is complementary to the probe and is amplified during PCR. Because of these requirements, any nonspecific amplification is not detected.

For test sample preparation, vector controls or constructs containing the coding sequence for the gene of interest are transfected into cells, such as for example 293T cells, and supernatants collected after 48 hours. For cell treatment and RNA isolation, multiple primary human cells or human cell lines are used; such cells may include but are not limited to, Normal Human Dermal Fibroblasts, Aortic Smooth Muscle, Human Umbilical Vein Endothelial Cells, HepG2, Daudi, Jurkat, U937, Caco, and THP-1 cell lines. Cells are plated in growth media and growth is arrested by culturing without media change for 3 days, or by switching cells to low serum media and incubating overnight. Cells are treated for 1, 6, or 24 hours with either vector control supernatant or sample supernatant (or purified/partially purified protein preparations in buffer). Total RNA is isolated; for example, by using Trizol extraction or by using the Ambion RNAqueous(TM)-4PCR RNA isolation system. Expression levels of multiple genes are analyzed using TAQMAN, and expression in the test sample is compared to control vector samples to identify genes induced or

repressed. Each of the above described techniques are well known to, and routinely performed by, those of ordinary skill in the art.

Table 1E indicates particular disease classes and preferred indications for which polynucleotides, polypeptides, or antibodies of the present invention may be used in detecting, diagnosing, preventing, treating and/or ameliorating said diseases and disorders based on "target" gene expression patterns which may be up- or down-regulated by polynucleotides (and the encoded polypeptides) corresponding to each indicated cDNA Clone ID (shown in Table 1E, Column 2).

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Thus, in preferred embodiments, the present invention encompasses a method of detecting, diagnosing, preventing, treating, and/or ameliorating a disease or disorder listed in the "Disease Class" and/or "Preferred Indication" columns of Table 1E; comprising administering to a patient in which such detection, diagnosis, prevention, or treatment is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to detect, diagnose, prevent, treat, or ameliorate the disease or disorder. The first and second columns of Table 1D show the "Gene No." and "cDNA Clone ID No.", respectively, indicating certain nucleic acids and proteins (or antibodies against the same) of the invention (including polynucleotide, polypeptide, and antibody fragments or variants thereof) that may be used in detecting, diagnosing, preventing, treating, or ameliorating the disease(s) or disorder(s) indicated in the corresponding row in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

In another embodiment, the present invention also encompasses methods of detecting, diagnosing, preventing, treating, or ameliorating a disease or disorder listed in the "Disease Class" or "Preferred Indication" Columns of Table 1E; comprising administering to a patient combinations of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

The "Disease Class" Column of Table 1E provides a categorized descriptive heading for diseases, disorders, and/or conditions (more fully described below) that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

The "Preferred Indication" Column of Table 1E describes diseases, disorders, and/or conditions that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

The "Cell Line" and "Exemplary Targets" Columns of Table 1E indicate particular cell lines and target genes, respectively, which may show altered gene expression patterns (i.e., up- or down-regulation of the indicated target gene) in Taqman assays, performed as described above, utilizing polynucleotides of the cDNA Clone ID shown in the corresponding row. Alteration of expression patterns of the indicated "Exemplary Target" genes is correlated with a particular

"Disease Class" and/or "Preferred Indication" as shown in the corresponding row under the respective column headings.

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The "Exemplary Accessions" Column indicates GenBank Accessions (available online through the National Center for Biotechnology Information (NCBI) at http://www.ncbi.nlm.nih.gov/) which correspond to the "Exemplary Targets" shown in the adjacent row.

The recitation of "Cancer" in the "Disease Class" Column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof) may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate neoplastic diseases and/or disorders (e.g., leukemias, cancers, etc., as described below under "Hyperproliferative Disorders").

The recitation of "Immune" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

The recitation of "Angiogenesis" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), diseases and/or disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders"), diseases and/or disorders involving cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level"), diseases and/or disorders involving angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity"), to promote or inhibit cell or tissue regeneration (e.g., as described below under "Regeneration"), or to promote wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

The recitation of "Diabetes" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diabetes (including diabetes mellitus types I and II), as well as diseases and/or disorders associated with, or consequential to, diabetes (e.g. as described below under "Endocrine Disorders," "Renal Disorders," and "Gastrointestinal Disorders").

Description of Table 2

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Table 2 summarizes homology and features of some of the polypeptides of the invention. The first column provides a unique clone identifier, "Clone ID:", corresponding to a cDNA clone disclosed in Table 1A or Table 1B. The second column provides the unique contig identifier, "Contig ID:" corresponding to contigs in Table 1B and allowing for correlation with the information in Table 1B. The third column provides the sequence identifier, "SEQ ID NO:X", for the contig polynucleotide sequence. The fourth column provides the analysis method by which the homology/identity disclosed in the Table was determined. Comparisons were made between polypeptides encoded by the polynucleotides of the invention and either a non-redundant protein database (herein referred to as "NR"), or a database of protein families (herein referred to as "PFAM") as further described below. The fifth column provides a description of the PFAM/NR hit having a significant match to a polypeptide of the invention. Column six provides the accession number of the PFAM/NR hit disclosed in the fifth column. Column seven, "Score/Percent Identity", provides a quality score or the percent identity, of the hit disclosed in columns five and six. Columns 8 and 9, "NT From" and "NT To" respectively, delineate the polynucleotides in "SEQ ID NO:X" that encode a polypeptide having a significant match to the PFAM/NR database as disclosed in the fifth and sixth columns. In specific embodiments polypeptides of the invention comprise, or alternatively consist of, an amino acid sequence encoded by a polynucleotide in SEQ ID NO:X as delineated in columns 8 and 9, or fragments or variants thereof.

Description of Table 3

Table 3 provides polynucleotide sequences that may be disclaimed according to certain embodiments of the invention. The first column provides a unique clone identifier, "Clone ID", for a cDNA clone related to contig sequences disclosed in Table 1B. The second column provides the sequence identifier, "SEQ ID NO:X", for contig sequences disclosed in Table 1A and/or Table 1B. The third column provides the unique contig identifier, "Contig ID:", for contigs disclosed in Table 1B. The fourth column provides a unique integer 'a' where 'a' is any integer between 1 and the final nucleotide minus 15 of SEQ ID NO:X, and the fifth column provides a unique integer 'b' where 'b' is any integer between 15 and the final nucleotide of SEQ ID NO:X, where both a and b correspond to the positions of nucleotide residues shown in SEQ ID NO:X, and where b is greater than or equal to a + 14. For each of the polynucleotides shown as SEQ ID NO:X, the uniquely defined integers can be substituted into the general formula of a-b, and used to describe polynucleotides which may be preferably excluded from the invention. In certain embodiments, preferably excluded from the invention are at least one, two, three, four, five, ten, or more of the polynucleotide sequence(s) having the accession number(s) disclosed in the sixth column of this Table (including for example, published sequence in connection with a particular

BAC clone). In further embodiments, preferably excluded from the invention are the specific polynucleotide sequence(s) contained in the clones corresponding to at least one, two, three, four, five, ten, or more of the available material having the accession numbers identified in the sixth column of this Table (including for example, the actual sequence contained in an identified BAC clone).

Description of Table 4

Table 4 provides a key to the tissue/cell source identifier code disclosed in Table 1B.2, column 5. Column 1 provides the tissue/cell source identifier code disclosed in Table 1B.2, Column 5. Columns 2-5 provide a description of the tissue or cell source. Note that "Description" and "Tissue" sources (i.e. columns 2 and 3) having the prefix "a_" indicates organs, tissues, or cells derived from "adult" sources. Codes corresponding to diseased tissues are indicated in column 6 with the word "disease." The use of the word "disease" in column 6 is non-limiting. The tissue or cell source may be specific (e.g. a neoplasm), or may be disease-associated (e.g., a tissue sample from a normal portion of a diseased organ). Furthermore, tissues and/or cells lacking the "disease" designation may still be derived from sources directly or indirectly involved in a disease state or disorder, and therefore may have a further utility in that disease state or disorder. In numerous cases where the tissue/cell source is a library, column 7 identifies the vector used to generate the library.

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Description of Table 5

Table 5 provides a key to the OMIM reference identification numbers disclosed in Table 1B.1, column 9. OMIM reference identification numbers (Column 1) were derived from Online Mendelian Inheritance in Man (Online Mendelian Inheritance in Man, OMIM. McKusick-Nathans Institute for Genetic Medicine, Johns Hopkins University (Baltimore, MD) and National Center for Biotechnology Information, National Library of Medicine, (Bethesda, MD) 2000. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/). Column 2 provides diseases associated with the cytologic band disclosed in Table 1B.1, column 8, as determined using the Morbid Map database.

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Description of Table 6

Table 6 summarizes some of the ATCC Deposits, Deposit dates, and ATCC designation numbers of deposits made with the ATCC in connection with the present application. These deposits were made in addition to those described in the Table 1A.

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Description of Table 7

Table 7 shows the cDNA libraries sequenced, and ATCC designation numbers and vector information relating to these cDNA libraries.

The first column shows the first four letters indicating the Library from which each library clone was derived. The second column indicates the catalogued tissue description for the corresponding libraries. The third column indicates the vector containing the corresponding clones. The fourth column shows the ATCC deposit designation for each library clone as indicated by the deposit information in Table 6.

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Definitions

The following definitions are provided to facilitate understanding of certain terms used throughout this specification.

In the present invention, "isolated" refers to material removed from its original environment (e.g., the natural environment if it is naturally occurring), and thus is altered "by the hand of man" from its natural state. For example, an isolated polynucleotide could be part of a vector or a composition of matter, or could be contained within a cell, and still be "isolated" because that vector, composition of matter, or particular cell is not the original environment of the polynucleotide. The term "isolated" does not refer to genomic or cDNA libraries, whole cell total or mRNA preparations, genomic DNA preparations (including those separated by electrophoresis and transferred onto blots), sheared whole cell genomic DNA preparations or other compositions where the art demonstrates no distinguishing features of the polynucleotide/sequences of the present invention.

In the present invention, a "secreted" protein refers to those proteins capable of being directed to the ER, secretory vesicles, or the extracellular space as a result of a signal sequence, as well as those proteins released into the extracellular space without necessarily containing a signal sequence. If the secreted protein is released into the extracellular space, the secreted protein can undergo extracellular processing to produce a "mature" protein. Release into the extracellular space can occur by many mechanisms, including exocytosis and proteolytic cleavage.

As used herein, a "polynucleotide" refers to a molecule having a nucleic acid sequence encoding SEQ ID NO:Y or a fragment or variant thereof (e.g., the polypeptide delinated in columns fourteen and fifteen of Table 1A); a nucleic acid sequence contained in SEQ ID NO:X (as described in column 5 of Table 1A and/or Table 1B) or the complement thereof; a cDNA sequence contained in Clone ID: (as described in column 2 of Table 1A and/or Table 1B and contained within a library deposited with the ATCC); a nucleotide sequence encoding the polypeptide encoded by a nucleotide sequence in SEQ ID NO:B as defined in column 6 (EXON From-To) of

Table 1C or a fragment or variant thereof; or a nucleotide coding sequence in SEQ ID NO:B as defined in column 6 of Table 1C or the complement thereof. For example, the polynucleotide can contain the nucleotide sequence of the full length cDNA sequence, including the 5' and 3' untranslated sequences, the coding region, as well as fragments, epitopes, domains, and variants of the nucleic acid sequence. Moreover, as used herein, a "polypeptide" refers to a molecule having an amino acid sequence encoded by a polynucleotide of the invention as broadly defined (obviously excluding poly-Phenylalanine or poly-Lysine peptide sequences which result from translation of a polyA tail of a sequence corresponding to a cDNA).

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In the present invention, "SEQ ID NO:X" was often generated by overlapping sequences contained in multiple clones (contig analysis). A representative clone containing all or most of the sequence for SEQ ID NO:X is deposited at Human Genome Sciences, Inc. (HGS) in a catalogued and archived library. As shown, for example, in column 2 of Table 1B, each clone is identified by a cDNA Clone ID (identifier generally referred to herein as Clone ID:). Each Clone ID is unique to an individual clone and the Clone ID is all the information needed to retrieve a given clone from the HGS library. Table 7 provides a list of the deposited cDNA libraries. One can use the Clone ID: to determine the library source by reference to Tables 6 and 7. Table 7 lists the deposited cDNA libraries by name and links each library to an ATCC Deposit. Library names contain four characters, for example, "HTWE." The name of a cDNA clone (Clone ID) isolated from that library begins with the same four characters, for example "HTWEP07". As mentioned below, Table 1A and/or Table 1B correlates the Clone ID names with SEQ ID NO:X. Thus, starting with an SEQ ID NO:X, one can use Tables 1A, 1B, 6, 7, and 9 to determine the corresponding Clone ID, which library it came from and which ATCC deposit the library is contained in. Furthermore, it is possible to retrieve a given cDNA clone from the source library by techniques known in the art and described elsewhere herein. The ATCC is located at 10801 University Boulevard, Manassas, Virginia 20110-2209, USA. The ATCC deposits were made pursuant to the terms of the Budapest Treaty on the international recognition of the deposit of microorganisms for the purposes of patent procedure.

In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (i.e., 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

A "polynucleotide" of the present invention also includes those polynucleotides capable of hybridizing, under stringent hybridization conditions, to sequences contained in SEQ ID NO:X, or the complement thereof (e.g., the complement of any one, two, three, four, or more of the polynucleotide fragments described herein), the polynucleotide sequence delineated in columns 7 and 8 of Table 1A or the complement thereof, the polynucleotide sequence delineated in columns 8 and 9 of Table 2 or the complement thereof, and/or cDNA sequences contained in Clone ID: (e.g., the complement of any one, two, three, four, or more of the polynucleotide fragments, or the cDNA clone within the pool of cDNA clones deposited with the ATCC, described herein), and/or the polynucleotide sequence delineated in column 6 of Table 1C or the complement thereof. "Stringent hybridization conditions" refers to an overnight incubation at 42 degree C in a solution comprising 50% formamide, 5x SSC (750 mM NaCl, 75 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5x Denhardt's solution, 10% dextran sulfate, and 20 µg/ml denatured, sheared salmon sperm DNA, followed by washing the filters in 0.1x SSC at about 65 degree C.

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Also contemplated are nucleic acid molecules that hybridize to the polynucleotides of the present invention at lower stringency hybridization conditions. Changes in the stringency of hybridization and signal detection are primarily accomplished through the manipulation of formamide concentration (lower percentages of formamide result in lowered stringency); salt conditions, or temperature. For example, lower stringency conditions include an overnight incubation at 37 degree C in a solution comprising 6X SSPE (20X SSPE = 3M NaCl; 0.2M NaH₂PO₄; 0.02M EDTA, pH 7.4), 0.5% SDS, 30% formamide, 100 ug/ml salmon sperm blocking DNA; followed by washes at 50 degree C with 1XSSPE, 0.1% SDS. In addition, to achieve even lower stringency, washes performed following stringent hybridization can be done at higher salt concentrations (e.g. 5X SSC).

Note that variations in the above conditions may be accomplished through the inclusion and/or substitution of alternate blocking reagents used to suppress background in hybridization experiments. Typical blocking reagents include Denhardt's reagent, BLOTTO, heparin, denatured salmon sperm DNA, and commercially available proprietary formulations. The inclusion of specific blocking reagents may require modification of the hybridization conditions described above, due to problems with compatibility.

Of course, a polynucleotide which hybridizes only to polyA+ sequences (such as any 3' terminal polyA+ tract of a cDNA shown in the sequence listing), or to a complementary stretch of T (or U) residues, would not be included in the definition of "polynucleotide," since such a polynucleotide would hybridize to any nucleic acid molecule containing a poly (A) stretch or the complement thereof (e.g., practically any double-stranded cDNA clone generated using oligo dT as a primer).

The polynucleotide of the present invention can be composed of any polyribonucleotide or polydeoxribonucleotide, which may be unmodified RNA or DNA or modified RNA or DNA. For example, polynucleotides can be composed of single- and double-stranded DNA, DNA that is a mixture of single- and double-stranded regions, single- and double-stranded RNA, and RNA that is mixture of single- and double-stranded regions, hybrid molecules comprising DNA and RNA that may be single-stranded or, more typically, double-stranded or a mixture of single- and double-stranded regions. In addition, the polynucleotide can be composed of triple-stranded regions comprising RNA or DNA or both RNA and DNA. A polynucleotide may also contain one or more modified bases or DNA or RNA backbones modified for stability or for other reasons. "Modified" bases include, for example, tritylated bases and unusual bases such as inosine. A variety of modifications can be made to DNA and RNA; thus, "polynucleotide" embraces chemically, enzymatically, or metabolically modified forms.

In specific embodiments, the polynucleotides of the invention are at least 15, at least 30, at least 50, at least 100, at least 125, at least 500, or at least 1000 continuous nucleotides but are less than or equal to 300 kb, 200 kb, 100 kb, 50 kb, 15 kb, 10 kb, 7.5kb, 5 kb, 2.5 kb, 2.0 kb, or 1 kb, in length. In a further embodiment, polynucleotides of the invention comprise a portion of the coding sequences, as disclosed herein, but do not comprise all or a portion of any intron. In another embodiment, the polynucleotides comprising coding sequences do not contain coding sequences of a genomic flanking gene (i.e., 5' or 3' to the gene of interest in the genome). In other embodiments, the polynucleotides of the invention do not contain the coding sequence of more than 1000, 500, 250, 100, 50, 25, 20, 15, 10, 5, 4, 3, 2, or 1 genomic flanking gene(s).

"SEQ ID NO:X" refers to a polynucleotide sequence described in column 5 of Table 1A, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 10 of Table 1A. SEQ ID NO:X is identified by an integer specified in column 6 of Table 1A. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. The polynucleotide sequences are shown in the sequence listing immediately followed by all of the polypeptide sequences. Thus, a polypeptide sequence corresponding to polynucleotide sequence SEQ ID NO:2 is the first polypeptide sequence shown in the sequence listing. The second polypeptide sequence corresponds to the polynucleotide sequence shown as SEQ ID NO:3, and so on.

The polypeptide of the present invention can be composed of amino acids joined to each other by peptide bonds or modified peptide bonds, i.e., peptide isosteres, and may contain amino acids other than the 20 gene-encoded amino acids. The polypeptides may be modified by either natural processes, such as posttranslational processing, or by chemical modification techniques which are well known in the art. Such modifications are well described in basic texts and in more detailed monographs, as well as in a voluminous research literature. Modifications

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can occur anywhere in a polypeptide, including the peptide backbone, the amino acid side-chains and the amino or carboxyl termini. It will be appreciated that the same type of modification may be present in the same or varying degrees at several sites in a given polypeptide. Also, a given polypeptide may contain many types of modifications. Polypeptides may be branched, for example, as a result of ubiquitination, and they may be cyclic, with or without branching. Cyclic, branched, and branched cyclic polypeptides may result from posttranslation natural processes or may be made by synthetic methods. Modifications include acetylation, acylation, ADPribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphotidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent cross-links, formation of cysteine, formation of pyroglutamate, formylation, gamma-carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristoylation, oxidation, pegylation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination. (See, for instance, PROTEINS - STRUCTURE AND MOLECULAR PROPERTIES, 2nd Ed., T. E. Creighton, W. H. Freeman and Company, New York (1993); POSTTRANSLATIONAL COVALENT MODIFICATION OF PROTEINS, B. C. Johnson, Ed., Academic Press, New York, pgs. 1-12 (1983); Seifter et al., Meth. Enzymol. 182:626-646 (1990); Rattan et al., Ann. N.Y. Acad. Sci. 663:48-62 (1992)).

"SEQ ID NO:X" refers to a polynucleotide sequence described, for example, in Tables 1A, Table 1B, or Table 2, while "SEQ ID NO:Y" refers to a polypeptide sequence described in column 11 of Table 1A and or Table 1B. SEQ ID NO:X is identified by an integer specified in column 4 of Table 1B. The polypeptide sequence SEQ ID NO:Y is a translated open reading frame (ORF) encoded by polynucleotide SEQ ID NO:X. "Clone ID:" refers to a cDNA clone described in column 2 of Table 1A and/or 1B.

"A polypeptide having functional activity" refers to a polypeptide capable of displaying one or more known functional activities associated with a full-length (complete) protein. Such functional activities include, but are not limited to, biological activity (e.g. activity useful in treating, preventing and/or ameliorating immune diseases and disorders), antigenicity (ability to bind [or compete with a polypeptide for binding] to an anti-polypeptide antibody), immunogenicity (ability to generate antibody which binds to a specific polypeptide of the invention), ability to form multimers with polypeptides of the invention, and ability to bind to a receptor or ligand for a polypeptide.

The polypeptides of the invention can be assayed for functional activity (e.g. biological activity) using or routinely modifying assays known in the art, as well as assays

described herein. Specifically, one of skill in the art may routinely assay secreted polypeptides (including fragments and variants) of the invention for activity using assays as described in the examples section below.

"A polypeptide having biological activity" refers to a polypeptide exhibiting activity similar to, but not necessarily identical to, an activity of a polypeptide of the present invention, including mature forms, as measured in a particular biological assay, with or without dose dependency. In the case where dose dependency does exist, it need not be identical to that of the polypeptide, but rather substantially similar to the dose-dependence in a given activity as compared to the polypeptide of the present invention (i.e., the candidate polypeptide will exhibit greater activity or not more than about 25-fold less and, preferably, not more than about tenfold less activity, and most preferably, not more than about three-fold less activity relative to the polypeptide of the present invention).

15 TABLES

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Table 1A

Table 1A summarizes information concerning certain polypnucleotides and polypeptides of the invention. The first column provides the gene number in the application for each clone identifier. The second column provides a unique clone identifier, "Clone ID:", for a cDNA clone related to each contig sequence disclosed in Table 1A. Third column, the cDNA Clones identified in the second column were deposited as indicated in the third column (i.e. by ATCC Deposit No:Z and deposit date). Some of the deposits contain multiple different clones corresponding to the same gene. In the fourth column, "Vector" refers to the type of vector contained in the corresponding cDNA Clone identified in the second column. In the fifth column, the nucleotide sequence identified as "NT SEQ ID NO:X" was assembled from partially homologous ("overlapping") sequences obtained from the corresponding cDNA clone identified in the second column and, in some cases, from additional related cDNA clones. The overlapping sequences were assembled into a single contiguous sequence of high redundancy (usually three to five overlapping sequences at each nucleotide position), resulting in a final sequence identified as SEQ ID NO:X. In the sixth column, "Total NT Seq." refers to the total number of nucleotides in the contig sequence identified as SEQ ID NO:X." The deposited clone may contain all or most of these sequences, reflected by the nucleotide position indicated as "5" NT of Clone Seq." (seventh column) and the "3' NT of Clone Seq." (eighth column) of SEQ ID NO:X. In the ninth column, the nucleotide position of SEQ ID NO:X of the putative start codon (methionine) is identified as "5' NT of Start Codon." Similarly, in column ten, the nucleotide position of SEQ ID NO:X of the predicted signal sequence is identified as "5' NT of First AA of Signal Pep." In the eleventh

column, the translated amino acid sequence, beginning with the methionine, is identified as "AA SEQ ID NO:Y," although other reading frames can also be routinely translated using known molecular biology techniques. The polypeptides produced by these alternative open reading frames are specifically contemplated by the present invention.

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In the twelfth and thirteenth columns of Table 1A, the first and last amino acid position of SEQ ID NO:Y of the predicted signal peptide is identified as "First AA of Sig Pep" and "Last AA of Sig Pep." In the fourteenth column, the predicted first amino acid position of SEQ ID NO:Y of the secreted portion is identified as "Predicted First AA of Secreted Portion". The amino acid position of SEQ ID NO:Y of the last amino acid encoded by the open reading frame is identified in the fifteenth column as "Last AA of ORF".

SEQ ID NO:X (where X may be any of the polynucleotide sequences disclosed in the sequence listing) and the translated SEQ ID NO:Y (where Y may be any of the polypeptide sequences disclosed in the sequence listing) are sufficiently accurate and otherwise suitable for a variety of uses well known in the art and described further below. For instance, SEQ ID NO:X is useful for designing nucleic acid hybridization probes that will detect nucleic acid sequences contained in SEQ ID NO:X or the cDNA contained in the deposited clone. These probes will also hybridize to nucleic acid molecules in biological samples, thereby enabling a variety of forensic and diagnostic methods of the invention. Similarly, polypeptides identified from SEQ ID NO:Y may be used, for example, to generate antibodies which bind specifically to proteins containing the polypeptides and the secreted proteins encoded by the cDNA clones identified in Table 1A and/or elsewhere herein

Nevertheless, DNA sequences generated by sequencing reactions can contain sequencing errors. The errors exist as misidentified nucleotides, or as insertions or deletions of nucleotides in the generated DNA sequence. The erroneously inserted or deleted nucleotides cause frame shifts in the reading frames of the predicted amino acid sequence. In these cases, the predicted amino acid sequence diverges from the actual amino acid sequence, even though the generated DNA sequence may be greater than 99.9% identical to the actual DNA sequence (for example, one base insertion or deletion in an open reading frame of over 1000 bases).

Accordingly, for those applications requiring precision in the nucleotide sequence or the amino acid sequence, the present invention provides not only the generated nucleotide sequence identified as SEQ ID NO:X, and the predicted translated amino acid sequence identified as SEQ ID NO:Y, but also a sample of plasmid DNA containing a human cDNA of the invention deposited with the ATCC, as set forth in Table 1A. The nucleotide sequence of each deposited plasmid can readily be determined by sequencing the deposited plasmid in accordance with known methods

The predicted amino acid sequence can then be verified from such deposits. Moreover, the amino acid sequence of the protein encoded by a particular plasmid can also be directly determined by peptide sequencing or by expressing the protein in a suitable host cell containing the deposited human cDNA, collecting the protein, and determining its sequence.

Also provided in Table 1A is the name of the vector which contains the cDNA plasmid. Each vector is routinely used in the art. The following additional information is provided for convenience.

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Vectors Lambda Zap (U.S. Patent Nos. 5,128,256 and 5,286,636), Uni-Zap XR (U.S. Patent Nos. 5,128, 256 and 5,286,636), Zap Express (U.S. Patent Nos. 5,128,256 and 5,286,636), pBluescript (pBS) (Short, J. M. et al., Nucleic Acids Res. 16:7583-7600 (1988); Alting-Mees, M. A. and Short, J. M., Nucleic Acids Res. 17:9494 (1989)) and pBK (Alting-Mees, M. A. et al., Strategies 5:58-61 (1992)) are commercially available from Stratagene Cloning Systems, Inc., 11011 N. Torrey Pines Road, La Jolla, CA, 92037. pBS contains an ampicillin resistance gene and pBK contains a neomycin resistance gene. Phagemid pBS may be excised from the Lambda Zap and Uni-Zap XR vectors, and phagemid pBK may be excised from the Zap Express vector. Both phagemids may be transformed into E. coli strain XL-1 Blue, also available from Stratagene

Vectors pSport1, pCMVSport 1.0, pCMVSport 2.0 and pCMVSport 3.0, were obtained from Life Technologies, Inc., P. O. Box 6009, Gaithersburg, MD 20897. All Sport vectors contain an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, also available from Life Technologies. See, for instance, Gruber, C. E., et al., *Focus 15:59* (1993). Vector lafmid BA (Bento Soares, Columbia University, New York, NY) contains an ampicillin resistance gene and can be transformed into *E. coli* strain XL-1 Blue. Vector pCR®2.1, which is available from Invitrogen, 1600 Faraday Avenue, Carlsbad, CA 92008, contains an ampicillin resistance gene and may be transformed into *E. coli* strain DH10B, available from Life Technologies. See, for instance, Clark, J. M., *Nuc. Acids Res. 16:*9677-9686 (1988) and Mead, D. et al., Bio/Technology 9: (1991).

The present invention also relates to the genes corresponding to SEQ ID NO:X, SEQ ID NO:Y, and/or a deposited cDNA (cDNA Clone ID). The corresponding gene can be isolated in accordance with known methods using the sequence information disclosed herein. Such methods include, but are not limited to, preparing probes or primers from the disclosed sequence and identifying or amplifying the corresponding gene from appropriate sources of genomic material.

Also provided in the present invention are allelic variants, orthologs, and/or species homologs. Procedures known in the art can be used to obtain full-length genes, allelic variants, splice variants, full-length coding portions, orthologs, and/or species homologs of genes corresponding to SEQ ID NO:X and SEQ ID NO:Y using information from the sequences disclosed herein or the clones deposited with the ATCC. For example, allelic variants and/or

species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source for allelic variants and/or the desired homologue.

The present invention provides a polynucleotide comprising, or alternatively consisting of, the nucleic acid sequence of SEQ ID NO:X and/or a cDNA contained in ATCC Deposit No.Z. The present invention also provides a polypeptide comprising, or alternatively, consisting of, the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X, and/or a polypeptide encoded by a cDNA contained in ATCC deposit No.Z. Polynucleotides encoding a polypeptide comprising, or alternatively consisting of the polypeptide sequence of SEQ ID NO:Y, a polypeptide encoded by SEQ ID NO:X and/or a polypeptide encoded by the cDNA contained in ATCC Deposit No.Z, are also encompassed by the invention. The present invention further encompasses a polynucleotide comprising, or alternatively consisting of the complement of the nucleic acid sequence of SEQ ID NO:X, and/or the complement of the coding strand of the cDNA contained in ATCC Deposit No.Z.

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			Vector		pBluescript	SK-	pBluescript	SK-	Uni-ZAP XR		pSport1		Uni-ZAP XR	•	Uni-ZAP XR		Uni-ZAP XR		pSport1									
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		cDNA	Clone ID		H2CBG48		H2MAC30		H6EAB28		H6EAB28		H6EDF66		H6EDX46		H6EDX46		HABAG37		HACBD91		HACCI17		HACCI17		HADAO89	
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	ATCC	Deposit	No:Z and	Date	203027	97922	03/07/97	209070	05/22/97	209603	01/29/98	PTA-841	10/13/99	209118	06/12/97	209277	09/18/97	209299	09/25/97	203364								
		cDNA	Clone ID		HADCP14	HAGAI85				HAGAM64		HAGAN21		HAGBZ81		HAGDG59		HAGDS20		HAGFG51								
		Gene	No.		10	=				12		13		13		13		13		13		14		15		16		17

	Last	AA	of	ORF	20	181	99	317	18	446	140	94	53	209	191	178	∞
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S' NT	5' NT of First	AA of	Signal	Pep	93	435	325	311		128	274	43	262	49	981	115	323
	S' NT	of Start	Codon		93	435	325	311		128	274	43	262	64	136	115	
	3, NT	Jo	Clone	Seq.	962	1256	752	2243	1025	1483	879	2761	755	2085	2534	824	3941
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			Vector		Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0				
	ATCC	Deposit	No:Z and	Date	209626 02/12/98	209626 02/12/98	209145 07/17/97	209877 05/18/98	209877 05/18/98	209009	209852 05/07/98	203364	209626 02/12/98	209603	PTA-849 10/13/99	PTA-849 10/13/99	PTA-849 10/13/99
		cDNA	Clone ID		918СНУН	HAHDR32	HAIBO71	HAIBP89	HAIBP89	HAICP19	HAIFL18	HAJAF57	HAJBR69	HAJBZ75	HAMFC93	HAMFC93	HAMFC93
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	3, NT	of .	Clone	Seq.	785	1280		1472		1201		635		729				733				1079		1959		1306		812
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		ANGS	Clone ID		HAMFK58	HADNV86	2011111111	HAPPW30		HAPPW30		HAPQT22	,	HASAV70				HASAV70				HASCG84		HATAC53		HATAC53		HATBR65
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	S' NT	of Start	Codon		247	37	1	143	130		131									170	Ţ	09	9			87
	3' NT	of	Clone	Seq.	1756	2098	1	1355	2325		546		859		1649		651		751	670	6	1252	953			1027
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		Total	Ę	Seq.	1756	2098		1355	2325		546		829		1649		675		751	1676	6/01	1280	953			1027
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			Vector		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR	44.4.4.	UIII-CAL AK	pSport1	pSport1	•		pSport1								
	ATCC	Deposit	No:Z and	Date	209683	209965	06/11/98	203858 03/18/99	PTA-844	10/13/99	209407 10/23/97	209603	PTA-	1543	03/21/00	209324 10/02/97										
		cDNA	Clone ID		HATCB92	HATCP77		HATDF29	HATDM46		HAIEE40	HBAF133	HBAFV19			HBAMB34										
		Gene	ò.		36	37		38	39		39		39		39		39		39		4	41	42			43

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		Vector		pSport1		pSport1		4.5	Uni-ZAP AK	"Cnort!	popod	nSnort 1	riodod d	TIni_7AP XR		pCMVSport	3.0	Uni-ZAP XR								
ATCC	Denosit	No:Z and	Date	PTA-	2075	PTA-	2075	00/60/90	209009	100700	70/707	2007/50	20/00/70	700374	10/02/97	209683	03/20/98	209683	03/20/98	PTA-885	10/28/99	PTA-885	10/28/99	PTA-885	10/28/99	209125 06/19/97
	ANCI	Clone ID		HBCPB32		HBCPB32			HBHAD12	THIRACASS	HBHMA23	mountang	CZCIVILIGII	75Warar	nama w	HBIMB51		HBIMB51		HBINS58		HBINS58		HBINS58		HBJFU48
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			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	- "	Uni-ZAP XR		pSportl		
	ATCC	Deposit	No:Z and	Date	209300	09/25/97	209300	09/25/97	203071	07/27/98	209346	10/09/97	209651	03/04/98	209877	05/18/98	203499	12/01/98	PTA-622	09/02/99	PTA-622	09/02/99	PTA-622	66/20/60	209242	09/12/97	PTA-	2072	00/60/90
		cDNA	Clone ID		HBJID05		HBJID05		HBJIY92		HBJJU28		HBJLC01		HBJLF01		HBJLH40		HBJNC59		HBJNC59		HBJNC59		HBNAW17		HBOEG11		
		Gene	o Z		51		51		52		53		24		55		99		57		57		57		58		59		

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	S' NT	of Start	Codon		53		47		188	302		260	,	137	,	168		173		139		4/		166		165	ļ	165
	3, NT	of	<u>ئ</u>	3	1352		1289		,	1411		2210		1554		2083		2092		730		863		1256		2084		2078
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			Vector		pSport1		pSport1			pSport1		ZAP Express		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR								
	ATC	Denosit	No:Z and	Date	PTA-	2072	PTA-	2072	00/60/90	203081	07/30/98	203858	03/18/99	209626	02/17/98	209551	12/12/97	209551	12/12/97	209242	09/12/97	209242	09/12/97	209626	02/12/98	209878	05/18/98	209878 05/18/98
		ANG	Clone ID		HBOEG11	-	HBOEG11			HBOEG69		HBXFL29		HCACU58		HCACV51		HCACV51		HCDBW86		HCE1Q89		HCE2F54	1	HCE3G69		HCE3G69
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	3, NT	Jo	Clone	Seq.	1016		1430		2494			2451			1630		1726		1823		1509		196		730		550		885
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			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR			Uni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209626	02/12/98	209965	06/11/98	PTA-	2069	00/60/90	PTA-	2069	00/60/90	209090	26/09/90	209745	04/02/98	209745	04/01/98	209651	03/04/98	PTA-842	10/13/99	PTA-842	10/13/99	PTA-842	10/13/99	209300
		cDNA	Clone ID		HCEEA88		HCEFB69		HCEFB80		-	HCEFB80			HCEGR33		HCEMP62		HCEMP62		HCENK38		HCEWE17		HCEWE17	•	HCEWE17		HCEWE20
		Gene	No.		89		69	-	70			20			71		72		72		73		74		74		74		75

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	5' NT of First	AA of	Signal	Pep	217		31		254		78		1130		180		148		136		215		509		139		36		
	S' NT	of Start AA of	Clone Codon		217		31		254		78		1130		180		148		136		215		209		139		36		
	3, NT	ot		Seq.	853		400		1261		639		3576		807		1262		614		958		946		1106		1254		
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			Vector		pSport1		pSport1		pSport1		pSport1		pSport1		pSport1		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pBluescript		pSport1		
	ATCC	Deposit	No:Z and	Date	209324	10/02/97	209242	09/12/97	209086	05/29/97	209324	10/02/97	209651	03/04/98	209651	03/04/98	209877	05/18/98	209346	10/09/97	209368	10/16/97	209368	10/16/97	209627	02/12/98	PTA-	2076	00/60/90
		cDNA	Clone ID		HCFCU88		HCFMV71		HCFNN01		HCFOM18		HCHINF25		HCHINF25		HCMSQ56		HCMST14		HCMTB45		HCMTB45		HCNSD93		HCOOS80		
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S' NT	of First	AA of	Signal Pep	40			-		381		1702		88		593		102	91			08		170		557		148
	S' NT	of Start	Codon	40									88		593		102	91			08		770		557		148
	3, 24	o	Clone Seq.	698			206		629		2333		865		1133		1222	627			298		2946		736		1283
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			Vector	pSport1	1		pSport1	1 - 0	Lambda ZAP	п	Lambda ZAP	П	ZAP Express		ZAP Express		ZAP Express	ZAP Express	•		ZAP Express		ZAP Express		ZAP Express		ZAP Express
	ATCC	Deposit	No:Z and Date	PTA-	2076	00/60/90	PTA-	2076	PTA-884	10/28/99	PTA-884	10/28/99	209215	08/21/97	209853	05/07/98	209215	PTA-	1544	03/21/00	209641	02/25/98	209641	02/25/98	209324	10/02/97	PTA-883 10/28/99
		cDNA	Clone ID	HCOOS80			HCOOS80		HCQCT05	•	нсостоя		HCUBS50		HCUCK44		HCUEO60	HCUGM86			HCUHK65		HCUHK65		HCUIM65		HCWEB58
		Gene	ò	85			85		98		98		87		88		68	96			91		91		92	-	93

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	S' NT	of Start	Codon		247		155		194		187		37		138		268		154		163		199		204		287		132	
	3' NT	of	Clone	Seq.	086		888		2777		1651		710		1540		1421		1489		2492		2184		2190		2158		1477	
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E	SEQ	Α	Ö	×	643		644		104		645		105		106		107		108		646		109		647		110		111	
			Vector	-	ZAP Express		ZAP Express		ZAP Express		ZAP Express		ZAP Express		ZAP Express		pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	V2
	ATCC	Deposit	No:Z and	Date	PTA-883	10/28/99	PTA-883	10/28/99	PTA-883	10/28/99	PTA-883	10/28/99	209324	10/02/97	209626	02/17/98	209215	08/21/97	209627	02/12/98	209627	02/12/98	203331	10/08/98	203331	10/08/98	209324	10/02/97	209745	04/10/190
		CDNA	Clone ID		HCWEB58		HCWEB58	•	HCWGU37		HCWGU37		HCWKC15	-	HCWLD74		HDHEB60		HDHIA94		HDHIA94		HDHIMA45		HDHMA45		HDHMA72		HDLAC10	
		Gene	S S		93		93		94		25		95		96		62		86		86		66		8		100		101	

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Circt A A	riisi AA	Secreted	Portion	22		33		33		22		22		34		35		34		21		77		22		19		34	
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S' NT	Or First	Sional	Pep	259		259		69		461		460		93		24		165		182		9/		9/		175		345	
		Codon		259		259		69		461		460		63		24		165		182		2/6		9/		175		345	
11.0	N Y	וס לי	Seq.	1984		3447		4909		1166		2191		2312		2242		2381		191		1932		1931		1256		703	
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		Vector	1013	pCMVSport	2.0	pCMVSport	3.0																						
0	ATCC	Deposit No.7 and	Date	PTA-499	08/11/80	PTA-163	66/10/90	PTA-163	06/01/90	209889	05/22/98	209889	05/22/98	209877	05/18/98	209877	05/18/98	209877	05/18/98	209125	06/19/97	895607	01/06/98	209568	01/06/98	209511	12/03/97	209877	05/18/98
		CDNA Clore III	Cloud	HDLA028		HDPBA28		HDPBA28		HDPBQ02		нррво02		нррвQ71		HDPBQ71		HDPBQ71		HDPC025		HDPCY37		HDPCY37		HDPFF39		HDPGK25	
	(Sene	j	102		103		103		104		104		105		105		105		106		107		107		108		109	

Tact	1631	¥,	ot r	칡	74	9	57	525	59	94	484	151	242	567	995	319	283
Eiret A A	רוואן אא	ţ	Secreted	Portion	19	31	24	09	21	23	23	35	30	22	22	22	50
Last	₹,	ō	Sig	Pep	18	30	23	65	20	22	22	34	29	21	21	21	19
First	₹ '	ot	Sig	Pep	1	1	1	1	1	1	-	1	1	1	1	1	-
AA	250		Ö	Y	1017	1018	1019	1020	1550	1021	1022	1023	1024	1025	1551	1552	1026
5' NT		AA of	Signal	Pep	256	245	196	59	259	20	15	118	252	16	103	59	271
1	S. N.	of Start AA of	Codon	,	256	245	196	59	259	20	15	118	252	91	103	59	271
1	3, N.I.	of	Clone	Seq.	3881	728	986	1633	1313	1410	1727	1353	2504	1905	1867	1722	2406
	5, N.I.	o	Clone	Seq.	1	-	-	308	1	1	-	-	-	-	415	-	-
		Total	Ę	Seq.	3881	728	986	1635	1314	1410	1727	1353	2504	1905	1867	1722	2406
LN .	SEQ		S S	×	120	121	122	123	653	124	125	126	127	128	654	655	129
			Vector		pCMVSport br>3.0												
	ATCC	Deposit	No:Z and	Date	203364	209125	209852	209563	209563	209627	209627	PTA-622	209745	209889	209889	209889	PTA-867 -10/26/99
		cDNA	Clone ID		HDPGP94	HDPHI51	HDPJF37	нрым30	HDPJM30	HDPNC61	HDPND46	HDPOE32	нрРон06	HDPOZ56	HDPOZ56	HDPOZ56	HDPPA04
		Gene	No.		110	111	112	113	113	114	115	116	117	118	118	118	119

	Last	₹	of T	Š	23	93	540	8	8	14	107	710	308	48	55	114	200
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	First AA	of	Secreted	Portion	12	50	36	19	18	∞	2	21	21	19	42	26	19
Last	AA	of	Sig	Pep	11	19	35	18	17	7	1	20	20	18	41	25	<u></u>
First	¥	oţ	Sig	Pep	1	1	1	1	1	1	1	-	1	1	1	-	
	SEQ	А	ö;	>	1553	1554	1027	1028	1555	1556	1557	1029	1558	1030	1559	1031	1032
S' NT	of First	AA of	Signal	Pep	1003	261	911	123	116	1525	345	184	227	2356	179	14	223
	5' NT of First	of Start AA of	Clone Codon			261	116	123				184	227	2356	179	41	223
	3, NT	Jo	Clone	Seq.	1613	786	2080	3408	308	1568	865	2343	1752	3091	536	1218	1396
	S' NT	Jo		Seq.	1	-	105	-	1	-	1	1	-	2304	1	-	
		Total	Ħ	Seq.	1675	786	2080	3408	308	1568	865	2343	1752	3091	536	1218	1396
ŁZ	SEQ	A	ÖN	×	959	657	130	131	859	629	099	132	661	133	662	134	135
			Vector		pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport	pCMVSport 3.0	pCMVSport	pCMVSport	pCMVSport 3.0	pCMVSport 3.0	pCMVSport	pCMVSport 3.0	pCMVSport 3.0
	ATCC	Deposit	No:Z and	Date	PTA-867 10/26/99	PTA-867 10/26/99	209626	PTA-868 10/26/99	PTA-868 10/26/99	PTA-868 10/26/99	PTA-868 10/26/99	209745	209745	209782 04/20/98	209782	209627	209782 04/20/98
		cDNA	Clone ID		HDPPA04	HDPPA04	HDPPH47	HDPSB18	HDPSB18	HDPSB18	HDPSB18	HDPSP01	HDPSP01	HDPSP54	HDPSP54	HDPSU13	HDPTD15
		Gene	Š.		119	119	120	121	121	121	121	122	122	123	123	124	125

	Last	AA Y	o d	5	369	526	549	467	51	802	214	43	331	333	219	220	83
	First AA	ور		티	27	35	19	61	46	20	20	20	21	21	16	16	13
Last		_	Sig	26 P	56	34	18	18	45	61	19	16	20	20	15	15	12
First	¥	ō	Sig	<u></u>	-	-	1	-	l	1	-	1	1	1	1	1	-
_	SEQ	А	ö;	7	1033	1034	1035	1036	1037	1038	1560	1561	1039	1562	1040	1563	192
S' NT		AA of	Signal	Pep	39	22	06	40	∞	45	35	27	274	259	0/	9	691
	5' NT of First	of Start	Codon		39	22	06	40	∞	45	35	27	274	259	70	65	
Γ	3. NT	Jo	4)	Seq.	1564	1734	2916	1748	3100	2669	716	2716	1266	1257	961	959	2070
	S' NT	of	Clone	Seq.	1	-	-	-	-	-		26	-	Ī		1	20
	·	Total	Ë	Seq.	1564	1734	2916	1748	3116	2679	716	2716	1266	1257	961	959	2070
É	SEO	[′] 白	ö	×	136	137	138	139	140	141	699	664	142	999	143	999	144
			Vector		pCMVSport	pCMVSport	pCMVSport 3.0	pCMVSport	pCMVSport 2.0	pCMVSport 2.0							
	ATCC	Deposit	No:Z and	Date	209965	209745	PTA-163	203331	203105	PTA-868	PTA-868	PTA-868 10/26/99	203570	203570 01/11/99	209300	209300	PTA-867 10/26/99
		CDNA	Clone ID		HDPTK41	HDPUG50	HDPUH26	HDPUW68	нррун60	HDPWN93	HDPWN93	HDPWN93	нронроз	нронроз	HDTBP04	HDTBP04	HDTEK44
		Gene	So.		126	127	128	129	130	131	131	131	132	132	133	133	134

	Last	¥	of	Sk	67	29	.83	85	53	53	80	49	297	56	51	51	-]
	5			Portion	18	18	13	18	21	21	7	32	22	31	22	22	
_			Sig	Pep	17	17	12	17	50	20	9	31	56	30	21	21	
First	¥¥	of O	Sig	Pep	1	1	1	1	1	1	1	1	1	1	1	1	
_	SEQ	<u>A</u>	Ö	>	1564	1565	1566	1042	1043	1991	1568	1044	1045	1569	1046	1570	1571
S' NT	of First	AA of	Signal	Pep	175	116	673	114	260	251	101	386	28	161	154	164	200
	S' NT	of Start	Codon		175	116		114	260	251		386	28	161	154	164	
	3, NT	o	4)	Seq.	1005	2988	2052	999	1242	628	903	712	813	802	1352	912	321
	S' NT	Jo	Clone	Seq.	1	-	2	-	-	-	29	1	-	-	1		-
		Total	Ę	Seq.	1005	2988	2052	995	1242	628	923	712	1200	1159	1352	912	321
Ę	SEQ	А	ö	×	299	899	699	145	146	0/9	671	147	148	672	149	673	674
			Vector		pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport	pCMVSport	pCMVSport 2.0	pCMVSport	pCMVSport	pCMVSport 2.0	pCMVSport 2.0
	ATCC	Deposit	No:Z and	Date	PTA-867 10/26/99	PTA-867 10/26/99	PTA-867	209463	PTA-868 10/26/99	PTA-868 10/26/99	PTA-868	209627	203570	203570	PTA-884	PTA-884 10/28/99	PTA-884 10/28/99
		cDNA	Clone ID	-	HDTEK44	HDTEK44	нртек44	HDTEN81	HDTFE17	HDTFE17	HDTFE17	HDTGC73	HDTIT10	HDTIT10	HDTMK50	HDTMK50	HDTMK50
		Gene	No.		134	134	134	135	136	136	136	137	138	138	139	139	139

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	Last	¥	ot	SE	28	1	ጸ	5	47			[35	į	77	3	<u></u>	;	2			116	_[3	~~~ S			415		
	First AA	of	Secreted	Portion	46		/1	8	7.7			į	3/	,	61	,	53	,	71			24		20			7		
Last	ΑA	Jo	Sig	Pep	45		91	1	21			ì	36	,	<u>8</u>		77		20			23		49					
First	AA	ō	Sig	Pep	_		-	•	_				,4		-		-		_			-		_			-		
¥	SEQ	А	ÖZ	>	1047		1048	١	1049				1050		1051		1052		1053			1054		1055			1572		
S' NT		AA of	Signal	Pep	137		57		116				66		337		147		237			63		205			256		
	5' NT of First	of Start	Codon		137		57		116				66		337		147		237			63		205					
	3' NT	of	Clone	Seq.	639		370		1251				867		1404		1288		989		,	1761		1999			2276		
	5' NT	Jo	Clone	Seq.	1		-		-				-		257		_		117			-		643			1956		
		Total	Z	Seq.	639		370		2067				867		1422		1288		1152			1761		1999			2342		
E	SEO	<u></u>	ÖN	×	150		151		152				153		154		155		156			157		158			675		
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR				Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		-	Uni-ZAP XR		Uni-ZAP XR			Uni-ZAP XR		
	ATCC	Deposit	No:Z and	Date	209877	05/18/98	209300	09/25/97	97955	03/13/97	209074	05/22/97	209877	05/18/98	209627	02/12/98	209965	06/11/98	97975	04/04/97	209081	209603	01/29/98	PTA-	2072	00/60/90	PTA-	2072	00/60/90
		CDNA	Clone ID		HE2DY70		HE2EN04		HE2FV03				HE2NV57		HE2PD49		HE2PY40		HE6EU50			HE8MH91		HE8OV67	,		HE8OV67	_ _	
		Gene	Š		140		141		142				143		144		145		146			147		148			148		

I act	ğ <	 ₹ ७	ORF	250	309	41	41	201	201	203	355	313	134
First A A I		Secreted 6			22 3	27	21	29	28 2	29 2	34	31	31
Last Ein		or Sig Se		21	21		20	28	27	28	33	30	30
First I		or Sig		1	-	-	1		-		1	-	_
AA		ЭŻ		1056	1057	1058	1059	1060	1573	1574	1061	1575	1576
		AA of		201	39	161	132	70	04.	8/	129	136	129
	IN C	Of Start Codon		201	39	191	132	70	70	78	129	136	129
	1	Clone		1021	1636	1077	1392	717	717	713	1209	1165	1160
1	_	of Police	Seq.	-	-	1	1	7	-	17		1	1
		Total NT	Seq.	1021	1636	1077	1392	717	717	713	1209	1165	1160
TZ S	795	Βġ	×	159	160	161	162	163	929	<i>511</i>	164	829	629
		Vector		Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR
000	ATCC	Deposit	Date	203570 01/11/99	209683 03/20/98	209551 12/12/97	209368	97923 03/07/97 209071 05/22/97	97923 03/07/97 209071 05/22/97	97923 03/07/97 209071 05/22/97	203570	203570 01/11/99	203570 01/11/99
		cDNA		HE8UB86	HE9BK23	HE9C069	HE9CP41	HE9DG49	HE9DG49	HE9DG49	HE90W20	HE90W20	HE90W20
		Gene	j L	149	150	151	152	153	153	153	154	154	154

	Last	¥¥	ot	SK F	354	Ţ	42	1	42		23	1	 89		139		46		125		147		121		121		161		
	First AA	jo	Secreted	Portion	28		32		27		30		27		16		16		41		53		24		24		21		
Last	ΑĄ	ō	Sig	Pep	27		31		8		53		76		15		<u>∞</u>		9		78		23		23		20		
First	AA	o	Sig	Pep	-		-								-		-				_				-		-		
¥¥	SEQ	A	Ö	>	1062		1063		1064		1065		1066		1067		1068		1069		1070		1071		1577		1072		
5' NT	of First	AA of	(0)	Pep	82		48		160		645		246		51		57		387		213		52		133		260		
	S' NT	of Start	Codon		82		4 8		160		645		246		51		57		387		213		52		133		260		
	3, NT	oę	Clone	Seq.	2149		1084		582		1046		558		649		1280		1037		921		582		089		808		
	5' NT	Jo	Clone	Seq.	1		-		-		470		-		7		52		148		1		1		1				
		Total	불	Seq.	2149		1084		582		1046		558		685		6991		1038		921		582		089		809		
E	SEQ		ÖN	×	165		166		167		168		169		170		171		172		173		174		089		175		
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		
	ATCC	Deposit	No:Z and	Date	PTA-499	08/11/99	209346	10/09/97	209242	09/12/97	209141	07/09/97	209141	07/09/97	203069	07/27/98	209745	04/02/98	209627	02/12/98	203071	07/27/98	203071	07/27/98	203071	07/27/98	PTA-	2082	00/60/90
		cDNA	Clone ID		HE9RM63		HEAAR07		HEBAE88		HEBBN36		HEBCM63		HEBEJ18		HEEAG23		HEEAJ02		HEEAQ11		HEGAN94		HEGAN94		HEGBS69		
		Gene	Š.		155		156		157		158		159		160		161		162		163		164		2		165		

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	Last	₹	o t	25	161		344		291	۶	<u>`</u>			291		184		190			13	<u></u>				123		4
	First AA	ot	Secreted	Portion	21		30		- 7	26	3			17		17		9			,;	<u>۔</u>				21		18
Last		ot	Sig	함	റ്റ		53		_	25	3			91		16		33			ļ	75				8		17
First	¥	jo	Sig	<u>당</u>	-		1		-	-	-	· -		-		-		-			ŀ	-				1		-
	SEQ	白	ö;	7	1578		1073		1579	1074	2			1075		1580		1076				1281				1077		1078
S' NT		AA of	Signal	Pep	253		500		402	Ę	;			629		31		175			ļ	175				18		198
	5' NT of First	of Start	Clone Codon		253		509		405];	.			629		31		175				175				18		198
		of	Clone	Seq.	807		1334		1342	1007	1000			2557		1955		1328				1327				1129		1689
	5' NT 3' NT	of	4)	Seq.	1		25		89	-	-			560		1		09				33				1		
		Total	Z	Seq.	1188		1396		1342	100	1880			2971		1955		1337				1338				1129		1689
E	SEQ	A	ö	×	681		176		682	56.	- //I			178		683		179				684				180		181
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	47. 47	UNI-ZAP AK			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR				Uni-ZAP XR				Uni-ZAP XR		pCMVSport
	ATCC	Deposit	No:Z and	Date:	PTA-	2082	209878	05/18/98	209878	02/10/20	PIA-	1544	03/21/00	209877	05/18/98	209877	05/18/98	209010	04/28/97	209085	05/29/97	209010	04/28/97	209085	05/29/97	209551	12/12/97	209551
	•	cDNA	Clone ID		HEGBS69		HELGK31		HELGK31		HELHUSS			HELHL48		HELHLA8		HEMAM41				HEMAM41				HEPAA46		HEQAK71
		Gene	No.		165		166		166		167			168		168		169				169				170		171

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1	Last	Ą,	ot ORF	5	173	112		155		86) \	45	:	1	:	13	<u>:</u>	26	; 	153		153		229	i 		229			
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First	₽¥	oţ	Sig	3		-	-	-	4	-	4	-	٦	-	-	-	-	-	4	-	-	-	1	-	4	<u> </u>	-	•		
AA I	SEQ	白	ö Ö >	1 3	1079	1582	7961	1583	2021	1000	1000	1001	1001	2001	1087	200.	1003	1001	1001	1005	7007	1584	1001	1006	1000		1505	601	-	
S' NT		AA of		1	22	53	70	57		30	Ç	(8	10,	402	١	123	171	101	730	007	221	100	300	000		200	000		
	S' NT	of Start AA of	Clone Codon		23	5	70	23	'n	3,0	& &	K	3	١	405	1	123	į	101	7,70	007	221	155	755	330);;;	320		
	3, NT	jo	Clone	Seq.	1000	550	7501	100.	103/	180	<u>5</u>	1	420		1090		1676		1569		1381	1460	1407		1199		;	1221		
	5' NT	jo	43	Seq.	-	1	 ee	1	<u> </u>	1	_				400		-		-		-	,						_		
		Total		Seq.	1000		1052	1	1037		066		420		1090		1676		1569		1381		1501		1251			1251		
LZ	CHO			×	182	1	685		989		183		184		185		186		187		188	-	687		189			889		
		-	Vector		pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	Uni-ZAP XR			Uni-ZAP XR																
	7714	AICC	No:Z and	Date	209965	06/11/98	209965	06/11/98	209965	06/11/98	209853	05/07/98	209407	10/23/97	209242	09/12/97	209580	01/14/98	209877	05/18/98	PTA-842	10/13/99	PTA-842	10/13/99	PTA-	2073	00/60/90	PTA-	2073	00/60/90
			Clone ID		HEQCC55		HEQCC55		HEQCC55		HERAD40		HERAR44		HESAJ10		HETAB45		HETBR16		HETEU28		HETEU28		HETLM70			HETLM70		
			Sene No.		172		172		172		173		174		175		176		177		178		178		179			179		

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				Š	<u> </u>		<u>~</u>		4	_	4	-	+	-	4	m -	\dashv				+	-7	\dashv	_	\dashv		-{		\dashv
	First AA	of	Secreted Portion	,	4		27			22		23		— 4		21						61		<u>~</u>		- 36		19	
Last	₹	ō	Sig Pep	-	-		56			77		77		33		8						<u></u>		17		35		<u>8</u>	
First	₽¥	Jo	Sig Pep	1	-		1					_		-		_		_				-		-		_		_	
	SEQ	白	ÿ ×	702.	1380		1087			1088		1089		1090		1001		1092				1093		1094		1095		1096	
S' NT	_	AA of	Signal Pep	ļ	7		53			199		559		240		47		267				34		4		89		1019	
	5' NT of First	of Start AA of	Codon				53			199		529		240		47		267				34		4		89		1019	
	3' NT	jo	Clone Sea.		517		1345			1347		1323		699		1271		1392				933		470		1020		1861	
	5' NT	Jo	Clone Sea.		161		1			1		209		96		-		475				-		1		-		772	
		Total	Seo.		517		1345			1347		1323	•	699		1271		1448				933		470		1020		1881	
Ϋ́	SEQ	Α	ÿ×		689		190			161		761		193		194		195				196		197		198		199	
			Vector		Uni-ZAP XR		Uni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR				Uni-ZAP XR		Lambda ZAP	п	Lambda ZAP	П	Uni-ZAP XR	
	ATCC	Deposit	No:Z and	Date	PTA-	2073	PTA-	1544	03/21/00	209407	10/23/97	209146	07/11/97	209300	09/25/97	209463	11/14/97	97923	03/07/97	209071	05/22/97	209603	01/29/98	209242	09/12/97	209368	10/16/97	209225	08/28/97
		cDNA	Clone ID		HETLM70		HFABG18			HFABH95		HFAMB72		HFAMH77		HFCCQ50	-	HFCDK17				HFCEW05		HFFAD59		HFFAL36		HFGAD82	
		Gene	Š.		179		180			181		182		183		184		185				186		187		188	_	189	

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	First AA	oţ	Secreted	Portion	40	Ş	€			1	5 7	;	5 7		<u>.</u>	,	€		× 1			5	77		7.7		34		/7
Last		o	Sig	Pep	36	18	ر خ	1		1	73	[23		14	3	35	ţ	<u>`</u>			;	17		21		33		92
First	₽	oţ	Sig	Pep	_	1		1	-	-	_]	_	7	_		-		-		-	-	-						-
AA	SEQ	A	ö	>	1097	1	1587	1	1588		1098	1	1589		1099		1100	;	1101		1590	90,	7011		1103		1104	1	1105
5' NT		AA of	Signal	Pep	45	7	52	3	280		24		74		137		62	ļ	25		15	ļ	30		140		414		185
	5' NT of First	of Start	Codon		45		52				24		74		137		62		25		15		36		140		414		185
	3. NT	of	Clone	Seq.	1450		559		678		1408		1441	ļ	2407		648		240		539		1169		1088		2067		2213
	S' NT	oţ	ō	Seq.	1		_		_		-		43		-		1				_		-		-		364		-
		Total	Z	Seq.	1450		529		829		1408		1441		2407		848		240		539		1169		1088		2067		2213
Ę	SEO	í A	ö	×	200		069		691		201		692		202		203		204		693		205		506		207		208
			Vector		pSport1		pSport1		pSport1		pSport1		pSport1		Uni-ZAP XR		Uni-ZAP XR		pSport1		pSportl		pSport1		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Denosit	No:Z and	Date	PTA-846	10/13/99	PTA-846	10/13/99	PTA-846	10/13/99	PTA-846	10/13/99	PTA-846	10/13/99	PTA-622	09/02/99	209463	11/14/97	209277	09/18/97	209277	09/18/97	209423	10/30/97	209511	12/03/97	209626	02/12/98	209551 12/12/97
		PNA	Clone ID		HFIIN69		HFIIN69		HFIIN69		HFIIZ70		HFIIZ70		HFKET18		HFLNB64		HFOXA73		HFOXA73		HFOXB13		HFPAC12		HFPA071		HFPCX09
		Gene	Ż		190		190		190		191		191		192		193		194		194		195		196		197	- 	198

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Last	AA	ORF	549		99	46	87	181	87	87	54	34	519	194	194	65
First AA	of	Secreted Portion	27		27	.82	29	29	29	29	34	21	21	16	16	25
Last AA	of	Sig	3,4		26	27	28	28	28	28	33	20	20	15	15	24
First AA	of	Sig	<u>†</u> –			1	-	1	1	-		1	1	I		
AA SEO	(A	<u>;</u>	1591		1592	1106	1107	1593	1594	1595	1108	1109	0111	1111	1596	1112
S' NT of First	AA of	Signal	240		185	103	181	181	257	257	178	158	93	133	139	213
S' NT	_	Codon	249		185	103	181	181	257	257	178	158	93	133	139	213
3, NT	of	Clone	2674		2207	961	1076	1069	1154	1197	532	740	1838	1175	1186	947
S' NT		Clone	; 05	}			-	-	84	85	1	-	32	-	-	-
	Total	TN 200	177 177	107	2207	962	1076	1069	1154	1197	532	762	1839	1175	1186	947
NT	ž A	Ö.	4 8	t S	695	209	210	969	269	869	211	212	213	214	669	215
		Vector	112: 7 A D VD	NV 103-1110	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Lambda ZAP II
ATCC	Deposit	No:Z and	Date	12/12/97	209551	209242	209878 05/18/98	209878 05/18/98	209878 05/18/98	209878 05/18/98	209242	209300	209782 04/20/98	209368	209368	209568 01/06/98
	cDNA	Clone ID	THEORYOO	nercaus	HFPCX09	HFPCX36	HFPCX64	HFPCX64	HFPCX64	HFPCX64	HFRAN90	HFTBM50	HFTDL56	HFVAB79	HFVAB79	HFXAM76
	Gene	Š.	8	130	198	199	200	200	200	200	201	202	203	204	204	205

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L	Last	₹ %	OR.	4	53	8	3 	3	5	128		162		3	-	14	: 	88	<u>-</u>	49		8		377	<u> </u>	-	_
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1,3st		of Sig	Pep	92	14	7	77	2	t	41	f	26	ì	30	3	22	? 	2	17	23	}	10	7	5	3	۲	3 │
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▼	-	Αÿ	X	1113	1114	1	 	7111	0111	1117	/111	1118	0111	1607	1387	1110	1119	1120	0711	1221	1711	50.	7711	5	1123	1500	1270
5. NIT		AA of Signal	_	4	33		 []	1	3	Т	061	1/1	į	9	148	5	6/1	,	- -	272	C17	:	4	;	14	ę	87
	S' NT	of of Start		44	33		13	9	3	00.	061]	141	Ġ,	148	į.	6/1	ļ	 4	57.5	C/7	;	14		14	9	87
ľ	3. NT	of	Seq.	1914	1026		1757		752	30,	1602	6	71/	!	1347		941		945	000	1338		663		1804	,	1821
l	S' NT	of		1	-	'	_		_	1		1	_				_			3,0	259		-		7		-
ľ		Total		1918	1026		1757		752		1602	1	712		1347		941		945		1538		663		1816		1821
	SEO		<u>;</u> ×	216	217		218		219		220		221		90		222		223		224		225		226		701
			Vector	Lambda ZAP	II I amhda 7AP	Lamoua 22 m	Lambda ZAP	Ш	Lambda ZAP	**	Lambda ZAP	77	Lambda ZAP	II	Lambda ZAP	П	Lambda ZAP	11	Lambda ZAP	Π	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Deposit	No:Z and Date	209603	200246	10/09/97	209965	06/11/98	209242	16/71/60	209511	12/03/97	209423	10/30/97	209423	10/30/97	209215	08/21/97	209877	05/18/98	209011	04/28/97	209407	10/23/97	203648	02/09/99	203648 02/09/99
		cDNA	Clone ID	HFXDJ75	THENDANG	HFADINGS	HFXGT26		HFXGV31		HFXHD88		HFXJU68		HFXJU68		HFXKJ03		HFXKY27		HGBFO79		HGBHE57	·	HGBIB74		HGBIB74
		Gene	ò Ö	506	188	/07	208		209		210		211		211		212		213		214		215) 	216		216

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	Last	¥	d	Š	151	1	<u>8</u>	<u> </u> ;	52		6/		20	1	<u> </u>		9/	1	— 28		74	-	7		33	_	53		42
	First AA	ō	Secreted	Portion	7	8	07.		19		36		14		42		21		36		58		78		7		14		∞
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	¥	o	Sig	Pep		,			-						_		-		-				1		_				-
	SEQ	A	ÿ:	>	1599	;	1124		1125		1126		1600		1127		1128		1129		1130		1601		1602		1603		1131
		AA of	Signal	Pep	7	T	<u> </u>		141		88		311		334		239		569		8		121		706		7		63
	S, NT	of Start	Codon				144		141		88				334		239		569		8		121						63
	3, NT	oę	Clone	Seq.	1094		406		1495		2150		615		1810		3099		865		2612		1125		2297		482		959
	S. NT	of	41	Seq.	-				_		-		1		141		I		229		1		-		1425		33		-
		Total	Ż	Seq.	1094		406		1495		2150		615		1827		3102		865		2612		1125		2297		482		959
E	SEQ	А	ö	×	702		227		228		229		703		230		231		232	-	233		704		705		90/		234
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pCMVSport	3.0	pCMVSport 3.0																
	ATCC	Deposit	No:Z and	Date	203648	02/09/99	209242	09/12/97	203648	05/06/20	209853	05/07/98	209853	05/07/98	209568	01/06/98	203364	10/19/98	209179	07/24/97	PTA-849	10/13/99	PTA-849	10/13/99	PTA-849	10/13/99	PTA-849	10/13/99	209195 08/01/97
		cDNA	Clone ID		HGBIB74		HGLAL82		HHAAF20		HHEAA08		HHEAA08		HHEBB10		HHEMA59		HHEMA75		HHEMM74		HHEMM74		HHEMM74		HHEMM74		HHENK42
		Gene	No.		216		217		218		219		219		220		221		222		223		223		223		223		224

Γ	Last	AA Y	of	2 3	787	× ×	 3	27	<u> </u>	S	70	36	 જ	53	501	5		5	76	107		200		326	25	(711	-		
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44			<u></u>		1132	1122	CCII	,	1134	1	1135	ì	1136	18	113/	1	1604		1605	00.	1138	3	1139	3	1606		1140			
TIN 'S		AA of	Signal	Pep	12	1	CII	7	156	╗	269		245	1	259	- 1	267	,	45		30		132	,	130		192			
	5' NT of First	of Start AA of	Clone Codon Signal		12	,	<u></u>	,	156		269		245		259		267		45		30		132	1	130		192			
		of	Clone	Seq.	1237	300	1899		238		1459		532		1084		1081		720		2263		1835		1836		199			
	S' NT 3' NT	Jo	-0)	Seq.	1		-		1		-		21		116		124								-					
		Total	Ę	Seq.	1237		1899		238		1459		532		1084		1081		720		2263		1835		1932		199		-	
	SEO			×	235		236		237		238		239		240		707		208		241		242		709		243			
	-		Vector		pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR			
	ATCC	Denosit	No:Z and	Date	203105	08/13/98	209511	12/03/97	209195	08/01/97	PTA-322	66/60/20	209138	07/03/97	203648	05/09/99	203648	05/09/99	203648	05/09/99	PTA-844	10/13/99	209746	04/07/98	209746	04/01/98	97975	04/04/97	209081	05/29/97
		A IN C	Clone ID		HHENP27		HHENQ22		HHEPD24	•	HHEPM33		HHEPT60		HHEPU04		HHEPU04	-	HHEPU04		HHFEC49		HHFGR93		HHFGR93		HHFHU59	-		
		2	S S	<u>.</u>	225		226		227		228		229		230		230		230		231		232		232		233			

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First AA	jo	Secreted Portion	56			33	76		20			7		23				,			-	27		41		20
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First AA	ot	Sig Pep	-			-	-		1			_		-	ı			1				I		1		1
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5' NT of First	AA of	Signal Pep	88				/11		132			62		270	•			270				253		107		71
	of Start AA of	Clone Clone Codon Seq. Seq.	58]	/11		132					270) i			270				253		107		71
	of	Clone Seq.	1378			2200	1300		1595			026		711	:			1117				068		1050		488
S' NT	o	Clone Seq.	-			,	-		513			272		8	,			8				215		1		1
	Total	NT Seq.	1378			1700	1366		1595			970		711	:			711				890		1050		488
NT SEQ	A	ÿ×	244			,;;	242		710			711		246	?			712				247		248		249
		Vector	Uni-ZAP XR				Uni-ZAP X:K		Uni-ZAP XR			Uni-ZAP XR		Lambda ZAP	i	11		Lambda ZAP	п			Lambda ZAP	п	Lambda ZAP	П	Uni-ZAP XR
ATCC	Deposit	No:Z and Date	97975	04/04/97	209081	16/67/50	PIA-	00/60/90	PTA-	2075	00/60/90	-PTA	00/60/90	97958	200000	709077	05/22/97	97958	03/13/97	209072	05/22/97	209463	11/14/97	209346	10/09/97	209877 05/18/98
	cDNA	Clone ID	HHFHR32			000	HHFOJ29		HHF0129			HHFO129		HHGCM76				HHGCM76				HHGDF16		HHGDW43		ннрес09
	Gene	No.	234				235		235			235		236	2			236				237		238		239

	Last	₹	of	SK.	295	302	224	48	56	55	55	314	111	51	89	108	108
	First AA	of	Secreted	Portion	27	38	38	33	22	27	27	2	27	19	29	23	24
Last	¥	ō	Sig	rep	56	37	37	32	21	56	26	1	26	18	28	22	23
First	¥	of	Sig	rep	1	1	1	1	1	1	1	1	1	1		1	
AA	SEQ	А	ö;	Ž	1147	1610	1611	1148	1149	1150	1612	1613	1151	1152	1153	1154	1614
5' NT	of First	AA of	Signal	Fep	116	89	74	247	06	238	231	457	142	557	84	99	47
	S' NT	of Start AA of	Codon		116	89	74	247	06	238	231		142	557	84	99	47
	3, NT	of	Clone	Seq.	1002	973	984	515	1113	1254	826	1674	661	1061	887	575	553
	5' NT	of	Clone	Seq.	1	-	1	1	-	-	-	1605	1	454	1	1	1
		Total	Ę,	Seq.	1002	973	984	515	1113	1254	826	4400	269	1061	887	575	553
NT	SEQ	白	ö;	X	250	713	714	251	252	253	715	716	254	255	256	257	717
			Vector		Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	ZAP Express	pBluescript SK-	pBluescript SK-	pBluescript SK-	pBluescript SK-
	ATCC	Deposit	No:Z and	Date	209878 05/18/98	209878 05/18/98	209878 05/18/98	209179 07/24/97	209346 10/09/97	PTA-855 10/18/99	PTA-855 10/18/99	PTA-855 10/18/99	209125 06/19/97	209146 07/17/97	209368	209215 08/21/97	209215 08/21/97
		cDNA	Clone ID		HHPGO40	HHPGO40	HHPGO40	HHPTJ65	HHSDX28	HHSGW69	HHSGW69	HHSGW69	HHTLF25	HJABX32	HJACA79	HJACG02	HJACG02
		Gene	No.		240	240	240	241	242	243	243	243	244	245	246	247	247

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i	First AA	oę	Secreted	Portion	28	2	2	27	20	20	14	34	19	30	40	30	30
, ,	¥	jo	Sig	Pep	27	-	-	56	49	19	13	33	18	29	39	29	29
First	ΑĄ	ot	Sig	rep	-			-	1	-	_	-	-	-	1	1	1
¥¥	SEO	A	ö;	Y	1155	1615	1616	1156	1157	1158	1159	1160	1161	1162	1163	1164	1617
S' NT	5' NT of First	AA of	Signal	rep	291	20	350	238	96	574	348	341	110	99	113	128	295
	S' NT	of Start	Codon		291			238	96	574	348	341	110	99	113	128	295
	3. NT	of	(I)	Seq.	1532	1614	1087	2429	1192	1021	1064	621	874	1231	1494	1216	1016
	5. NT	Jo	Clone	Seq.	-	1020	491	39		303	306	79		-	-	-	1
		Total	Į,	Seq.	1532	1614	1087	2441	1192	1021	1064	621	884	1231	1494	1216	1016
TZ (SEQ	A	ö;	×	258	718	719	259	260	261	262	263	264	265	266	267	720
			Vector		pBluescript SK-	pBluescript SK-	pBluescript SK-	pBluescript SK-	pBluescript SK-	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	Uni-ZAP XR	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0
	ATCC	Deposit	No:Z and	Date	PTA-843 10/13/99	PTA-843 10/13/99	PTA-843 10/13/99	203364 10/19/98	PTA-322 07/09/99	209580 01/14/98	209407 10/23/97	209580 01/14/98	209146 07/17/97	209641 02/25/98	209368 10/16/97	209563 12/18/97	209563 12/18/97
		cDNA	Clone ID		HIACG30	HJACG30	HJACG30	HJBAV55	HJBCU04	HJMB118	HJMBN89	HJMBT65	HJMBW30	HJPAD75	HKAAE44	НКААН36	HKAAH36
		Gene	Š		248	248	248	249	250	251	252	253	254	255	256	257	257

1	Last	¥	ot		293	85	6	567	203	277	61		196		47	1	243	9	243	5	2		301		154	3	760
	First AA	o o	_	Į,	<u> </u>	30	000	e Or	30	S	30		35		17	į.	8	Ş	<u>×</u>		4 7	ì	70		56	į	31
		ō	Sig	2 2 2	62	29	18	65	ç	7	56		34		16	ļ	17	ļ	17	Ş	53		25		25	١	ξ.
First	¥	of	Sig	ep di	_	-	7	-	-	-			1		-		-		- -		-				-		-
	SEQ	A	ö;	<u>-</u>	1618	1619	1	1620	1691	1701	1622	,	1165		1166		1167		1623	,	1168		11169		1624		1170
S' NT		AA of	Signal	rep	182	184	,	254	00,	129	189	٠,	26		274		77		69 		27		 		35		218
	5' NT of First	of Start AA of	Codon		182	184		254	90.	671	189		26		274		77		69		27		38		35		218
	3, NT	jo	6)	Seq.	1490	1392		1516	;	1381	1439		859		1238		1189		1191		496		3153		1626		2352
	5' NT	of	Clone	Seq.	1	8		-	Ì	190	-		-		45		_		-				-		-		-
		Total	Ä	Seq.	1490	1441		1516	1	1381	1430		859		1238		1189		1191		496		3153		1626		2352
Ę	SEQ	Α	öz	X	721	722		723	1	724	7.75	}	268		269		270		726		271		272		727		273
			Vector		pCMVSport	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	DWW.Snort	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport 2.0
	ATCC	Deposit	No:Z and	Date	209563	209563	12/18/97	209563	16/81/71	209563	200563	12/18/97	209551	12/12/97	209603	01/29/98	209683	03/20/98	209683	03/20/98	209346	10/09/97	209346	10/09/97	209346	10/09/97	PTA-849 10/13/99
		ANG	Clone ID		HKAAH36	HKAAH36		HKAAH36		HKAAH36	TIVA A UIZE	OCHARAII	HKAAK02		HKABI84		HKABZ65		HKABZ65		HKACB56		HKACD58		HKACD58		HKACM93
		Jene J	Š		257	257		257		257	257	3	258		259		260		260		261		262		262		263

	Last	AA	of	Š	120	569	17	45	275	70	70	79	438	57	43	222	ᅙ
	First AA	of		Portion	31	31	14	5	26	30	30	18	31	30	31	15	20
Last	¥	ō	Sig	Pep	30	30	13	4	25	56	29	17	30	67	30	14	19
First	¥	ŏ	Sig	Pep	_	-	1	1	1	1	1	1	1	1	1	1	1
ΑĄ	SEQ	А	ö;	>	1625	1626	1627	1628	1171	1172	1629	1173	1174	1630	1175	1176	1631
S' NT		AA of	Signal	Pep	189	314	202	638	526	32	21	398	501	197	243	69	18
	5' NT of First	of Start	Codon		189	314			229	32	21	398	501	197	243	69	18
Γ	3. NT	oę	4)	Seq.	549	1120	1893	1187	1517	1297	1286	1105	2496	2351	549	1418	1356
	5' NT 3' NT	of	Clone	Seq.	1	-	739	-	30	1	1	1	1	-	-	09	1
	_	Total	Ę	Seq.	549	1120	1893	1187	1523	1297	1286	1105	2496	2351	549	1432	1356
Ę	SEQ	А	ö	X	728	729	730	731	274	275	732	276	277	733	278	279	734
			Vector		pCMVSport	pCMVSport	pCMVSport	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport 2.0	pCMVSport	pCMVSport 1	pCMVSport 1
	ATCC	Deposit	No:Z and	Date	PTA-849 10/13/99	PTA-849 10/13/99	PTA-849 10/13/99	PTA-849 10/13/99	209568 01/06/98	209965	209965	209423	209627 02/12/98	209627	209300	209511 12/03/97	209511 12/03/97
		cDNA	Clone ID		HKACM93	НКАСМ93	HKACM93	нкасм93	НКАDQ91	HKAEG43	HKAEG43	HKAEL80	HKAEV06	HKAEV06	HKAFK41	HKDBF34	HKDBF34
		Gene	Š		263	263	263	263	564	265	265	366	267	267	268	269	269

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	5		Secreted	+	32		77		/7		7.7	3	2	,	42	1		1	 93		23	į	3		7	\dagger	54	· ·	32
_	_	j o	Sig	32	31	18	22	1	97	1	92	1	19	1	23	1	32		25		24	į	74				23		31
First	¥¥	jo	Sig	rep L		1	_	1			_		-		I	-	_		_		-	,	-	1					-
_	SEQ	А	ö;	-	1177		1632		1178		1633		1179		1180		1181	,	1182		1183		1634		1635		1184		1185
S' NT	of First	AA of	Signal	rep	449	Т	470		313		57		130		336		43		20		130		153		471		<u>z</u>		260
	5' NT of First	of Start AA of	Clone Codon		449				313		27		130		336		43		8		130		153				64		260
	3, NT	ot	Clone	Seq.	1048		1063		1021		1311		1439		609		1215		1543		2784		718		614		1478		1780
	S' NT	of	-	Seq.	1		-		-		-		1		156		-		П		7		-		1		1		349
	_	Total	Ę,	Seq.	1048		1063		1021		1311		1492		609		1215		1543		2784		718		614		1478		1780
IN	SEQ	白	ö	X	280		735		281		736		282		283		284		285		286		737		738		287		288
			Vector		pSport1		pSport1		pSport1		pSport1		pBluescript		Uni-ZAP XR		Uni-ZAP XR												
	ATCC	Deposit	No:Z and	Date	209126	06/19/97	209126	06/19/97	209853	05/07/98	209853	05/07/98	209603	01/29/98	209324	10/02/97	209463	11/14/97	209511	12/03/97	PTA-845	10/13/99	PTA-845	10/13/99	PTA-845	10/13/99	209580	01/14/98	209746
		cDNA	Clone ID		HKGAT94		HKGAT94		HKGC027	_	HKGC027		HKISB57		HKIYH57		HKIYP40		HKMLK53		HKMLP68		HKMLP68		HKMLP68		HL2AC08		HL2AG57
		Gene	No.		270		270		271		271		272		273		274		275		276		276		276		277		278

			Ę		Γ			S' NT		First	Last		
	ATCC		SEO		5' NT	3' NT	S' NT	5' NT of First	SEQ	₹	¥¥	First AA	Last
	Deposit		A	Total	of	o	of Start	AA of	A	o	ō	ō	¥
Clone ID	No:Z and	Vector	Ö	Ź,	Clone	4)	Codon	C)	ÿ;	Sig	Sig	Secreted	of Date
	Date		×	Seq.	Seq.	Seq.		Pep	X	rep G	<u>e</u>	rormon	2
HLCND09	PTA-	Uni-ZAP XR	289	1984	-	1984	146	146	1186		88	36	011
	2076 06/09/00												
HLCND09	PTA-	Uni-ZAP XR	739	465	1	465	38	38	1636	_	38	39	142
	2076				***								
	00/60/00		3	1	1	,	500	500	1107	ŀ	30	Ę	ý
HLDBX13	203331	pCMVSport 3.0	290	1815		1815	303	303	118/	1	39	\$	3
HLDON23	209628	pCMVSport	291	1262	208	1256	368	368	1188	-	. 20	21	113
HLDOW79	PTA-	pCMVSport	292	686	-	686	43	43	1189		21	22	275
	1544	3.0											
	03/21/00												
HLDQC46	PTA-	pCMVSport	293	632	-	632	163	163	1190	-	34	32	87
	1544	3.0											
	03/21/00												
HLDQR62	203027	pCMVSport	294	2572	427	2572	520	520	11191	_	28	61	161
	06/26/98	3.0											(
HLDQU79	203071	pCMVSport	295	1488	-	1488	66	66	1192	-	23	7 7	348
	07/27/98	3.0											
HLDRM43	209628	pCMVSport	596	609	-	609	54	22	1193	_	20	21	151
	02/12/98	3.0											
HLDRM43	209628	pCMVSport	740	759	-	759	<u>इ</u>	164	1637	_	20	21	151
	02/12/98	3.0]		
HLDRP33	209641	pCMVSport	297	612		612	215	215	1194		56	27	41
	02/25/98	3.0											

	LN	Z	
5' NT 3' NT 5' NT of First		0	SEQ
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Clone Clone Codon	¥ S		Vector NO:
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1 613 224	613		Uni-ZAP XR 298 6
5 1 1015	1015		Uni-ZAP XR 299 10
1 733	733	┼	Uni-ZAP XR 741 7
1 741	17.	┿	7 CVC GV GV 777 7
1	:		1
12 675	951	ļ	Uni-ZAP XR 743 9.
2 1 1022 186	122	00 1022	pCMVSport 1 300 10
5 1 1766 249	18	1766	pCMVSport 1 301 17
1 1 1191 158	1191		pCMVSport 1 302 11
1 628 227	809		744
1	3		
5 1 795 43	815		Lambda ZAP 303 81
7 1 787 101	787	 	AP XR 304
3 1 633 17	633	 	Lambda ZAP 305 6
3 1 913 205	913	+	1 ambda 7.AP 306 9
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	Last	AA V	o t	Š	190	061	4	132	62	8	28	55	43	319	42	187	140
	First AA	jo	Secreted	Portion	77	22	30	30	22	19	18	23	43	2	36	16	25
		ot	Sig	5 5	21	21	29	29	21	18	17	22	42	1	35	15	24
First	¥	oţ	Sig	Pep		-	1	1	1	1	1		1	1	1	-	-
_	SEQ	A	Ö	>-	1204	1642	1205	1643	1206	1207	1208	1209	1210	1211	1644	1212	1213
S' NT		AA of		Pep	10	3	247	42	92	80	74	197	268	20	313	436	326
	5' NT of First	of Start	Codon		10	3	247	42	92	08	74	197	268	20	313	436	326
	3. NT	o	6)	Seq.	686	066	774	702	1524	1184	770	617	1130	3740	1932	664	1167
	S. NT	of	Clone	Seq.	1	-	1	1	-	-	-	69	-	1908	86	246	304
		Total	Ę	Seq.	686	066	774	1038	1524	1184	770	617	1130	3740	1932	997	1167
E	SEQ	Α	ö	×	307	745	308	746	309	310	311	312	313	314	747	315	316
			Vector		Lambda ZAP	Lambda ZAP II	Lambda ZAP II	Lambda ZAP II	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	pCMVSport	pCMVSport 3.0
	ATCC	Deposit	No:Z and	Date	209603	209603	PTA-623	PTA-623 09/02/99	PTA-163 06/01/99	203071	209243	209346	209628	209965	209965	209626	209651 03/04/98
		cDNA	Clone ID		HLQDR48	HLQDR48	нгоем64	НЕОЕМ64	HLTAU74	HLTC033	HLTDV50	HLTEJ06	HLTFA64	HLTHG37	HLTHG37	HLWAA17	HLWAD77
		Gene	ò Z		297	297	298	298	299	300	301	302	303	304	304	305	306

-	Last	¥¥	ot	2	278	354	338	63	6	757	28	T	40	47	77	54	222	215	92
	First AA	Jo	Secreted	rornon	47	22	56	31	3	78	37	ļ	17	25	41	40	19	19	24
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S' NT	_	AA of	Signal	rep G	78	212	38	149		432	155		92	222	383	254	190	205	86
	5' NT of First	of Start AA of	Codon		28	212	38	149		432	155		92	222	383	254	190	202	86
	3. NT	of	4)	Seq.	1618	1311	1892	1038		2081	646		312	826	770	729	1237	266	1045
	S' NT	Jo	~	Seq.		-	-	-		_	-			-		-	-	74	35
T		Total	Ë	Seq.	1618	1338	1892	1038		2081	646		312	826	770	729	1237	766	1045
15 2	SEO	_Α	ÖN	X	317	318	319	320		321	322		323	324	325	748	326	749	327
			Vector		pCMVSport	pCMVSport	pCMVSport	pCMVSport	3.0	pCMVSport	pCMVSport	3.0	pSport1	pSport1	pSport1	pSport1	pSport1	pSport1	pSport l
	ATCC	Deposit	No:Z and	Date	203071	209511	209651	209407	10/23/97	203517	209126	06/19/97	203071	209126	209346	209346	209022	209022	209407 10/23/97
		cDNA	Clone ID		HLWAE11	HLWA022	HLWAY54	HLWBI63		HLWBY76	HLWCF05		HLYAC95	HLYAF80	HLYAN59	HLYAN59	HLYAZ61	HLYAZ61	нгувр32
		Gene	No.		307	308	309	310		311	312		313	314	315	315	316	316	317

	_	_	r.			Т	_	Т		Τ.	_		7.			Т		Т				_		٦	_	٦		Т		7
	Last	¥	ا و		8		713		7	- 1	340		- 1	306		1	=	1	20				82	_	<u></u>	_	-	_	54	
	First AA	of	Secreted	Portion	22	ļ	17	ļ	91		27			27			<u>×</u>		34				<u>-</u> -		8		30		29	
Last	ΑĄ	of	Sig	rep	21		16		15		56			56		1	17		33				43		53		53			
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	SEQ	А	ö;	7	1225		1226		1647		1227			1648			1228		1229				1230		1231		1649		1232	
		AA of	S	Pep	267		491	T	115		4			3			179		928				180		36		95		20	
	5' NT of First	of Start AA of	Codon		267		491		115		4			٣			179		928				180		36		95		20	
	3. NT	oę	Clone	Seq.	1267		3194		437		1258			1084			869		1853				974		413		1168		1010	
	S' NT	o	4)	Seq.	_		-		-		-			-					725				1		1		1		-	
		Total	Ę	Seq.	1267		3194		437		1258			1084			869		1856				974		413		1168		1010	
Į.	SEQ	Α	ö	×	328		329		750	•	330			751			331		332				333		334		752		335	
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR			Uni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR				Uni-ZAP XR		Lambda ZAP	П	Lambda ZAP	п	Lambda ZAP	11
	ATCC	Deposit	No:Z and	Date	209563	12/18/97	209139	07/03/97	209139	07/03/97	PTA-	2075	00/60/90	PTA-	2075	06/06/00	209243	09/12/97	97974	04/04/97	209080	05/29/97	209563	12/18/97	203069	07/27/98	203069	07/27/98	209853	05/0//98
		cDNA	Clone ID		HMADS41		HMADU73		HMADU73		HMAMI15			HMAMI15			HMDAE65		HMDAN54				HMDAQ29	,	HMEA148		HMEAI48		HMECK83	
		Gene	So.		318		319		319		320			320			321		322				323		324		324		325	

PCT/US02/08278

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	4	to ,	Secreted	+	33	31	1	14	20		67		9I	1	78	,	£		33	,	02	18		19	24	
Last	¥¥	jo :	Sig	1	34	02	,	13	19		78		15		27		32		32		19	17		18	23	
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	SEQ	А	<u>;</u> ; >	-	1233	1234	1	1235	1236		1237		1238		1239		1240		1650		1241	1242		1243	1244	
	_	AA of	Signal	127	34	121	!	49	182		221	П	142		63		157		192		169	28		138	137	
	5' NT of First	of Start AA of	Codon		34	121		49	182		221		142		63		157		192		169	28		138	137	
	3, NT	ot	6)	956	1369	1200		1420	1674		921		822		627		1871		1897		1726	1283		1552	1617	
	5' NT	oţ	Clone	Sed.	28	73		1	13		99		_		1		1		37		-	-		-		
		Total	N.	Seq.	1369	1337		1420	1674		921		822		206		1871		1914		1726	1283		1552	1617	
ĮN	SEQ	А	ö,	<	336	337		338	339		340		341		342		343		753		344	345	}	346	347	
			Vector		Lambda ZAP II	Lambda ZAP		Uni-ZAP XR	Uni-ZAP XR		pSport1		pSport1		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	IJni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR	
	ATCC	Deposit	No:Z and	Date	209368	209407	10/23/97	209563	209878	05/18/98	209346	10/09/97	209368	10/16/97	209407	10/23/97	209022	05/08/97	209022	05/08/97	209563	209324	10/02/97	209423	PTA-	1544
		cDNA	Clone ID		HMEED18	HMEET96		HMIAL37	HMIAP86		HMKCG09		HMMAH60		HMQDF12		нморт36		HMQDT36		HMSBX80	HMSES21	170 101.	HMSGB14	HMSGU01	
		Gene	No.		326	327		328	329		330		331		332		333		333		334	335	<u> </u>	336	337	

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ATCC			SEQ		5° NT	3, NT	5' NT of First		SEQ	¥	AA	First AA	Last
Deposit			白	Total	of	ot	of Start AA of	AA of	А	ð	o	Jo ,	ξ,
No:Z and Vector	Vector		ë×	Z S	Clone	Clone	Codon	Signal Pep	ÿ ≻	Sig Pep	Sig Pep	Secreted Portion	of ORF
DTA II-: 7AD VD	TIS: 7AD V	٦	757	1.	-	1257	137	137	1651	1-	23	24	235
	V 73-110	$\overline{}$		}			:						
03/21/00													
PTA- Uni-ZAP XR	Uni-ZAP X	8	755	1654	1	1654	135	135	1652	_	23	74	120
1544 03/21/00					_								
209126 Uni-ZAP XR	Uni-ZAP X	×	348	756	_	756	103	103	1245	1	29	30	45
26/16/92													
PTA- Uni-ZAP XR	Uni-ZAP >	8	349	1402	1	1402	134	134	1246	-	23	7	23
2070											•		
DTA- IIni-ZAP XR	IIni-7AP X	2	756	919	30	616	162	162	1653	-	23	24	103
	i i	1)									
209641 Uni-ZAP XR	Uni-ZAP X	8	350	2270	-	2231	111	111	1247	-	27	28	77
+]				9	Ç.	0,0,	7	2.5	,	Ş
209076 Uni-ZAP XR 05/22/97	Uni-ZAP X	<u>~</u>	351	1123	4	1123	272	212	1248	7	31	37	,
203105 Uni-ZAP XR	Uni-ZAP	XX	352	1417	L	1417	133	133	1249	-	22	23	73
08/13/98													
209551 pCMVSport	pCMVSpc	닏	353	1173	1	1173	306	306	1250	_	19	20	%
12/12/97 3.0	3.0												
Ď Dd	pCMVSpc	Ħ	354	5961	531	1914	183	183	1251		16	17	221
	3.0						1				;	ļ]
DG.	pCMVSp	nou	757	1842	407	1783	413	413	1654		22	56	103
05/18/98 3.0	3.0												

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	First AA	of ,	Secreted	1 Officer	29	17	١	9		6	07	24		% %	6	96	71	10	10		22		22	į	57
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AA	SEQ	А	ÿ>	-	1655	1656		1657	1658		1252	1253		1254		1659	1066	1233	1660		1256		1661		1257
S' NT	of First	AA of	Signal	rep	251	62	,	09	09		10	106		۷		8	27.0	201	129		45		45		101
	5' NT of First	of Start AA of	Codon		251	62		09	09		10	106		7		20	17,0) } 			42		42		101
	3, NT	ot	4)	Seq.	1914	1487		1653	1830		1382	1755		547		708	1	920	556		1974		9261		830
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			Vector		pCMVSport	pCMVSport	3.0	pCMVSport	pCMVSport	3.0	pSport1	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209878	209878	05/18/98	209878	209878	05/18/98	209603	209628	02/12/98	209324	10/02/97	209324	10/07/97	209147	209147	76/11//0	203105	08/13/98	203105	08/13/98	209236
		cDNA	Clone ID		HMUAP70	HMUAP70		HMUAP70	HMUAP70		HMVBN46	HMWEB02		HIMWF002		HMWF002		HIMWFY10	HMWFY10		HMWGY65		HMWGY65		HNEAC05
		Gene	No.		344	344		344	344		345	346		347		347		348	348	} }	349		349		350

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		_	_	Pep	139	Т	226		488		506		98		275		68		20		81		122		55		224		185
	5. NT	of Start	Clone Codon		139		226		488		506		98		275		68		20		81		122		55		224		185
	3. NT	of	Clone	Seq.	1043		669		2058		1370		919		575		1144		703		1647		1647		1570		639		524
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		_	Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	PTA-845	10/13/99	PTA-845	10/13/99	203027	06/26/98	203071	07/27/98	209463	11/14/97	92626	04/04/97	209368	10/16/97	209243	09/12/97	PTA-844	10/13/99	PTA-844	10/13/99	PTA-844	10/13/99	92626	04/04/97	209299
		cDNA	Clone ID		HNEEB45		HINEEB45		HNFFC43		HINFGF20		HINFJF07		HNFJH45		HNGAK47		HINGAP93		HNGBC07		HNGBC07		HNGBC07		HINGBT31		HNGDJ72
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5. NT	_		_	Pep	333	94		86		72		23	178		135		221	77	87	ļ	321	١	1/7	27
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	3' NT	of	4)	Seq.	1035	099		491		1042		1095	427		962	1	527	1037	828		985		1110	2128
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			Vector		Uni-ZAP XR	IIni 7AP XR	NW TURNING	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209563	12/18/97	07/24/97	209299	09/25/97	209197	08/08/97	209346	97976	04/04/97	209236	09/04/97	209243	209368	209463	11/14/97	209603	01/29/98	209215	PTA-847 10/13/99
		cDNA	Clone ID		HNGDU40	THICECOS	00000011	HNGE029		HINGEP09		HINGHR74	HNGIH43		HNGIJ31		HNGIQ46	HNGJE50	HNGJ057		HNGJP69		HNGJT54	HNGOI12
		Gene	Š.		361	2,00	706	363		364		365	396		367		368	369	370		371		372	373

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AA SEQ	А	ÿ>	1665		1666		1281	1282		1283	1001	1704		1285		1286		1287		1288		1667		1289		1668
5' NT of First	AA of	Signal Pen	27	i	965		391	328		158	050	°C7		78		231		168		274		282		. 52		
S' NT	of Start	Codon	27	ì			391	328		158	030	0C7		- 78 		231		168		274		282		25		- 58
3' NT	of	Clone	777		1396		956	905		762	100	C7/		909		793		426		843		692		2642		1654
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		Vector	TIM: 7AD VD	חווי-באד איני	Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XK		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	i	Uni-ZAP XR		Uni-ZAP XR
ATCC	Deposit	No:Z and	Date our	10/13/99	PTA-847	10/13/99	203648	209180	07/24/97	209243	16/71/60	209243	09/12/97	209243	09/12/97	209299	09/25/97	9266	04/04/97	209346	10/09/97	209346	10/09/97	PTA-844	10/13/99	PTA-844
	cDNA	Clone ID	CITOCIAT	FINGOILE	HNGOI12		HNGOM56	HNHAH01		HNHCX60		HNHCY64		HNHCY94		HINHDW38		HNHDW42		HNHED17		HNHED17		HNHEI42		HNHEI42
	Gene	Š.	222	3/3	373		374	375		376		377		378		379		380		381		381		382		382

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5. NT	of First	AA of	Signal Pep	166	3	331	160		175	12	}		342	8		111		57	તે		307		306		33
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	3° NT	Jo	Clone Sea.	777	;	641	600	099	607	1355	1333		805	701	177	2163		1	1/03		2087		11114		642
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		···········	Vector	W. 2	Uni-ZAP XK	Uni-ZAP XR	UA U 4 2	Uni-ZAP XK	Uni-ZAP XR	UV 0 4 5	Uni-ZAP XK		Uni-ZAP XR	1	pent v sport 3.0	pCMVSport	3.0		pCMVSport		pSport1		pSport1		Uni-ZAP XR
	ATC	Denosit	No:Z and	Dale	PTA-844 10/13/99	PTA-844	10/13/99	209138 07/03/97	209407	10/23/27	PTA- 1543	03/21/00	203570	01/11/22	209324	PTA-	1544	03/21/00	PTA- 1544	03/21/00	209782	04/20/98	209782	04/20/98	209236 09/04/97
		VIV.	Clone ID		HNHE142	HNHEI42		HNHF029	HNHFU32	,	HNHOD46	-	HNHOG73		HNTBL2/	HNTCE26			HNTCE26		HNTNI01		HNTN101		HOAAC90
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No:Z and Vector	Vector		ÿ;		4	Clone	Clone Codon	Signal	ÿ >	Sig	Sig	Secreted	of ORF
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209236 Uni-ZAP XR	'ni-ZAP X	 Ki	176	652		652	38	38	10/3	-	<u>.</u>	01	<u>.</u>
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209243 Uni-ZAP XR	'ni-ZAP ⟩	氏 -	401	909		909	 63	63	1298		17	77	
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203570 pSport1	pSport1		402	1118	_	1118	991	166	1299	<u>-</u>	2	17	ò
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209244 Uni-ZAP XR	ni-ZAP X	~	403	755	_	755	251	251	1300	_	4 .	CI	3
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209012 Uni-ZAP XR	Ini-ZAP X	~	404	1939	294	1939		434	1301	_	97	17	દ
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203364 Uni-ZAP XR	Ini-ZAP X	~	405	1776	138	1284	725	725	1302	_	33	34	9
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209463 Uni-ZAP XR	Ini-ZAP X	8	406	682	_	682	139	139	1303	_	19	20	2
┪									,000	L]-	C	100
203570 Uni-ZAP XR	Ini-ZAP X	24	407	1126	, <u>-</u>	1126			1304	-	-	7	401
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203570 Uni-ZAP XR	Ini-ZAP	8	777	1124		1124	27	27	1674	_	×	6	148
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203570 Uni-ZAP XR	Ini-ZAP X	8	408	851	1	851	87	87	1305		56	27	- 29
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209224 Uni-ZAP XR	Ini-ZAP	æ	409	747	75	747	149	149	1306	-	20	21	165
08/28/97											;		Į
209224 Uni-ZAP XR	Jni-ZAP	XR	27.8	099	-	099	89	89	1675	-	56	27	
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	3' NT	o	Clone	Seq.	2520	3,1	1462		1635		1424		2079		2410		2409		876		1586		101		2131		427		1500
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			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport
	ATCC	Denosit	No:Z and	Date	203517	12/10/98	209628	02/12/98	PTA-844	10/13/99	PTA-844	10/13/99	209965	06/11/98	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848
		δNG.	Clone ID		HOEBZ89		HOEDB32		HOEDE28		HOEDE28		HOEDH84	-	HOFMQ33	,	HOFMQ33		но FMQ33		но FMQ33		HOFMQ33	•	HOFMT75		HOFMT75		HOFMT75
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S' NT	5' NT of First SEQ	AA of	0)	Pep	129	79	155	167		64		7,	2	81		81	9/		23		158		m ·
		of Start	Clone Codon		129	79	155	167		8		7,4	2	81			92						-
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IN	SEQ	白	ö	X	98/	416	787	417		418		917	414	788		789	790		791		792		793
			Vector		pCMVSport	pCMVSport	pCMVSport	pCMVSport	2.0	pCMVSport	2.0	- C. (1) (1)	pcivi v sport 2.0	pCMVSport	2.0	pCMVSport 2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	7.0	pCMVSport
	ATCC	Deposit	No:Z and	Date	PTA-848	PTA-623	PTA-623	PTA-	1544	PTA-	1544	03/21/00	P1A-848 10/13/99	PTA-848	10/13/99	PTA-848 10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848
		cDNA	Clone ID		HOFMT75	HOFNC14	HOFNC14	HOFND85		HOFNY91		11010000	HOFOCSS	НОРОСЗЗ		НОГОСЗЗ	НО ГОСЗЗ		НО ГОСЗЗ		НОГОС33		НОГОСЗЗ
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S' NT	of First	AA of	Signal	Pep	27		53		514		1455		25		30		2		148		348	222	707		327		221		230
	5' NT of First	of Start AA of	Codon		57				514				25		30				148		348	2,50	767		327		221	_	230
	3, NT		-	Seq.	2087		2054		1409		1697		2571		2586		638		3080		1837	90,	1188		558		2499		2522
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			Vector		pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	7.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport	2.0	pCMVSport 2.0
	ATCC	Denosit	No:Z and	Date	209853	05/07/98	209853	05/07/98	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	PTA-848	10/13/99	203517	12/10/98	209568	01/00/98	209603	01/29/98	209346	10/09/97	203331	10/08/98	203331 10/08/98
		ANG	Clone ID		HOGCK20		HOGCK20		HOGCK63		HOGCK63		HOGCS52		HOGCS52		HOGCS52		HOHBB49		нонвс68		HOHBY12		HOHCC74		нонсн55		нонсн55
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5' NT	of First	AA of	Signal	Pep	1076	146		232		544		26				477				208		214		289	•	336		911	
	5' NT of First	of Start AA of	Clone Codon		1076	146		232		544		96				477				208		214	_	289	_	399	4	116	
	3' NT	of	Clone	Seq.	2214	1258		290		1935		1747				1747				4693		1051		1895		1050		1642	
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	ATCC	Deposit	No:Z and	Date	209423	209423	10/30/97	209324	10/02/97	209551	12/12/97	97957	79/13/07	209073	05/22/97	97957	03/13/97	209073	05/22/97	209086	05/29/97	209423	10/30/97	203071	07/27/98	203071	07/27/98	203071	07/27/98
		CDNA	Clone ID		HOSDJ25	HOSDJ25		HOSEG51		HOSEQ49		HOSFD58				HOSFD58				HOUCO17	,	HOUDK26		HOUGG12		HOUGG12		HOUGG12	
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				Vector		pSport1		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pBluescript	SK-			pBluescript	SK-			pBluescript	SK-			pSport1			pSport1		
	2.	ATCC	Deposit	No:Z and	Date	209299	09/25/97	203181	86/60/60	203181	86/60/60	203181	86/60/60	77676	04/04/97	209082	05/29/97	209012	04/28/97	209089	06/05/97	209012	04/28/97	209089	06/05/97	PTA-	2076	00/60/90	PTA-	2076	00/60/90
			ANG	Clone ID		HOVCA92		HPASA81		HPASA81		HPASA81		HPBCU51			_	HPDDC77				HPDDC77				HPDWP28			HPDWP28		
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	_	AA of	Signal	Pep	21	283	20	128	127	126	119	696	509	98	136	232
	5' NT of First	of Start AA of	Codon		21	283	20	128	127	126	119		209	98	136	
	3, NT	of	Clone	Seq.	665	700	2466	1739	1739	2648	538	1346	912	3107	566	751
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		cDNA	Clone ID		HPFCL43	HPFDG48	HPIAQ68	HPIBO15	HPIBOIS	HPJBK12	HPJBK12	HPJBK12	HPJBK12	HPJCL22	HPJCL22	HPJCL22
		Gene	Š		430	431	432	433	433	434	434	434	434	435	435	435

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			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Lambda ZAP	П	Uni-ZAP XR		Uni-ZAP XR		pBluescript
	() E	AICC	No:Z and	Date	209551	12/12/97	PTA-872	10/26/99	PTA-872	10/26/99	PTA-872	10/26/99	PTA-872	10/26/99	PTA-872	10/26/99	209683	03/20/98	209628	02/12/98	203105	08/13/98	62626	03/27/97	209852	05/07/98	209852	05/07/98	209244
		TING	Clone ID		HPJCW04		HPJEX20		HPJEX20		HPJEX20		HPJEX20		HPJEX20		HPMAI22		HPMFP40		HPMGJ45		HPQAC69		HPRBC80		HPRBC80		HPRSB76
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	3, NT	Jo	-63	Seq.	819		1414		891		501		323				1340		1340		813	1676		1747		1251		1237
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			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR				Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	pBluescript	3	pCMVSport	3.0	pCMVSport	3.0	pCMVSport
	ATCC	Denosit	No:Z and	Date	209244	09/12/97	PTA-843	10/13/99	PTA-843	10/13/99	PTA-843	10/13/99	209007	04/28/97	209083	05/29/97	209852	05/07/98	209852	05/07/98	209852	209511	12/03/97	209651	03/04/98	209889	05/22/98	209889
		ANG	Clone ID		HPVAB94		HPWAY46		HPWAY46		HPWAY46		HPWAZ95				HPWDJ42		HPWDJ42		HPWDJ42	HP7 A R47		HRAAB15		HRABA80		HRABA80
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	Ç	ATCC	Deposit	Date	209852	05/07/98	209852	05/07/98	209889	05/22/98	209889	05/22/98	209889	05/22/98	209628	02/12/98	209423	10/30/97	209241	09/12/97	209299	09/25/97	209148	07/11//97	209148	76/11/10	209148	07/11/97	209124
			cDNA		HRACD15		HRACD15	•	HRACD80		HRACD80		HRACD80	_	HRDDV47		HRDFD27		HRTAE58		HSATR82		HSAUK57	•	HSAUK57		HSAUL82		HSAVD46
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				Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pBluescript
		ATCC	Deposit	No:Z and	Date	209651	03/04/98	209368	10/16/97	209463	11/14/97	209324	10/02/97	209139	07/03/97	209746	04/01/98	209603	01/29/98	209603	01/29/98	209683	03/20/98	209852	05/07/98	209852	05/07/98	203081	07/30/98	209145
		-	PNGS	Clone ID		HSAVH65		HSAVK10		HSAWZ41		HSAXA83		HSAYM40		HSDAJ46		HSDEK49		HSDEK49		HSDER95		HSDEZ20		HSDEZ20	'	HSDJA15		HSDSB09
			Gene	S S		460		461		462		463		494		465		466		466		467		468		468		469		470

	Last	₹	of T	ż i	121	181	1	6	Ę	2	257		218	1	ر ا	[5	ć.	950		905	7,3		247		247
	First AA L	of Jo		틹	<u> </u>	101	\dashv		+	14	23	7	7		4.5		4.5	25	十	77	\dagger	77	ac.	$\neg \dagger$	78
Last	AA F	Jo	_	ᅱ	17	<u> </u>	<u>.</u>		1	13	22		23	:	41		4	24	1	21	;	17	2.7	ì	27
First]	¥¥	jo		Pep	_	†-	-		1	-	1					1	_	1			1	_	-	-	-
AA I		['] 白	<u>.</u> .		1726	1270	13/8	1379		1380	1381		1727		1382	1	1728	1383		1729	3	1730	1204	1304	1731
S' NT		_		Pep	77	+	160	44	\top	177	431		108		200		700	786		127		12	į	ţ	57
	5' NT of First	of Start AA of	Codon		22	(9	4		177	431		108		200		700	786		127		12	ļ	\$	57
	3, NT		ပ္	Seq.	819		1151	898		1986	1781		1224		2118		1868	4412		1792		1673	3,0	969	296
-	S' NT	of .	ē	Seq.		1					-		-					-		134				1	1
	-	Total		Seq.	819		1151	898		1986	1781		1448		2118		1868	4412		1792		1673		696	886
L E	SEO.			×	829		481	482		483	484		830		485		831	486		832		833		487	834
			Vector	-	pBluescript		pBluescript	Uni-ZAP XR		Uni-ZAP XR	I Ini-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	I Ini-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pBluescript	pBluescript
	JUL V	Perceit	No:Z and	Date	209145	07/17/97	209324	209346	10/09/97	209853	900000	08/28/97	209226	08/28/97	PTA-843	10/13/99	PTA-843	PTA-322	66/60/20	PTA-322	66/60//20	PTA-322	07//09/99	209346	209346 10/09/97
		AINC	Clone ID		HSDSB09		HSDSE75	HSFAM31	-	HSHAX21	UCIAC17	/ fourth	HSIAS17		HSIDX71		HSDX71	HSKDA27	TOWN TO THE	HSKDA27		HSKDA27		HSKHZ81	HSKHZ81
		(S S	<u>.</u>	470		471	472		473	7.1.7	ţ ţ	474		475		475	176	· ·	476		476		477	477

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•	Last	₹	of of	2	84	1	57		42	_!	42	1	9	j	17		4		41	0	<u> </u>	62		47		20		%
	FIIST AA	ᅜ	Secreted	Fortion	53	į	23		11		17			,			77		21	ç	3	200		56		21		35
[Ą,	ਰ	Sig	rep	78	-	22		91		91				27		8		20	15	<u>-</u>	16		25	ļ	20		
First	AA V	ō	Sig	함			_		-		-		-		-		_		-	-	-	<u> -</u>		-		_		-
Ψ	SEQ	А	ÿ;	×	1385		1732		1386		1733		1734		1387		1388		1735	1200	1389	1390	<u>}</u>	1391		1392		1393
S' NT		AA of	Signal	Pep	526		233		114		506		1331		151		202		8	95	479	130	:	103	,	133		125
	S. NT	of Start	Codon		226		233		114		506			,	151		202		300	9	473	130	}	103		133		125
		of	Clone	Seq.	1476		1501		2126		1083		1904		630		1370		1937	,	1397	654	}	104		1143		791
	5' NT 3' NT	jo	6)	Seq.	1				_		1		1		-		-			Ş	788	-	•	-		_		-
		Total	Ä	Seq.	1476		1501		2126		1083		1904		630		1370		1937	100	1397	557	3	1044		1143		162
ŁZ	SEQ	白	ö	×	488		835		489		836		837		490		491		828	9	492	103	2	494		495		496
			Vector		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		pSport1	TI.: 7AD VD	חוו-ביטן עדע	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209551	12/12/97	209551	12/12/97	PTA-855	10/18/99	PTA-855	10/18/99	PTA-855	10/18/99	209300	09/25/97	PTA-855	10/18/99	PTA-855	10/18/99	203105	00/12/76	140607	209626	02/12/98	209683	03/20/98	209551
		cDNA	Clone ID		HSLCQ82		HSLCQ82		HSLJG37		HSLJG37		HSLJG37		HSNAB12		HSODE04		HSODE04		HSPBF70	01360011	HOCKING	HSSA120		HSSDX51		HSSFT08
		Gene	Š		478		478		479		479		479		480		481		481		482	55,	463	484	<u>-</u>	485		486

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Last	AA	of ORF	909			909		295		295	37		8	99			51		8		267		172
First AA	of	Secreted Portion	33			28		29		31	31		25	32			28	i	19		46		23
Last AA	jo	Sig Pep	32			27		28		90	30		24	31			27		18		45		22
First AA	of	Sig Pep	-			-		-		-	-		-	-			-		1		1		-
AA SEQ	А	ÿ >	1394			1736		1395		1737	1738		1396	1397			1398		1399		1400		1739
5' NT of First	AA of	Signal Pep	344			338		62		55	99		120	153			97		256		101		211
5° NT	of Start AA of	Codon	344			338		62		25	99		120	153			46		256		101		211
3' NT	oę	Clone Sea.	2425			2460		1174		1163	1183		1766	1021			433		727		1573		1399
s [,] NT	Jo	Clone Seq.	-	1		501		1		1	1		1	1			1		1		233		58
	Total	Sea	2425			2460		1174		1163	1183		9921	1021			433		727		2112		1938
NT SEQ	Α	ÿ×	497	<u>.</u>		688		498		840	841		499	500			501		502	•	503		842
		Vector	IIni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
ATCC	Deposit	No:Z and	PTA-	1543	03/21/00	PTA-	1543	209853	05/07/98	209853	209853	05/07/98	203027	209007	. 04/28/97	209083 05/29/97	209244	09/12/97	209603	01/29/98	203570	01/11/99	203570
	cDNA	Clone ID	HSSGD\$3	2000011		HSSGD52		HSSIC35		HSS1C35	HSSJC35		HSTBJ86	HSUBW09			HSVAM10		HSVBU91		HSXCG83		HSXCG83
	Gene	Š.	487	}		487		488	}	488	488		489	490			491		492		493		493

Last	₹	of ORF	45	99	99	17	672	69	56	56	106	279	434	9	305
First AA	o	Secreted Portion	34	25	25	01	24	29	61	19	2	2	31	22	25
Last	ot	Sig Pep	33	24	24	6	23	28	18	18		1	30	21	24
First	of	Sig Pen	-	-		-	-	_	1	1	1	1	1	-	-
AA SEQ	<mark>́</mark> Д	ÿ >	1401	1402	1740	1741	1403	1404	1405	1742	1743	1744	1406	1745	1407
5' NT of First	AA of	Signal Pep	295	123	136	1271	155	186	131	345	723	2	448	215	47
5' NT of First	of Start AA of	Codon	295	123	136		155	186	131	345			448	215	47
3' NT	of	Clone Sea.	1112	1598	892	1392	2801	1407	1097	992	875	2050	3347	1707	1238
5' NT	of	Clone Sea.	-	-	21	H	1	-	1	226	770	1767	1655	-	1
	Total	NT Seq.	1112	1598	768	1392	2801	1407	1097	768	2087	2096	3466	1707	1238
NT SEO	[′] A	ÿ×	504	505	843	844	506	507	508	845	846	847	509	848	510
		Vector	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0
ATCC	Deposit	No:Z and Date	209641	PTA-847 10/13/99	PTA-847 10/13/99	PTA-847 10/13/99	PTA- 1544 03/21/00	209746 04/07/98	PTA-849 10/13/99	PTA-849 10/13/99	PTA-849 10/13/99	PTA-849 10/13/99	PTA-163 06/01/99	PTA-163 06/01/99	209463 11/14/97
	cDNA	Clone ID	HSXEC75	HSXEQ06	HSXEQ06	нѕхеоо6	HSYAV50	HSYAV66	HSYAZ50	HSYAZ50	HSYAZ50	HSYAZ50	HSYAZ63	HSYAZ63	HSYBG37
	Gene	ò.	464	495	495	495	496	497	498	498	498	498	499	499	200

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Last	¥	of	ORF	305	289	127	89	243	190	142	142	28	75	<i>L</i> 9	126
First AA	Jo	Secreted	Portion	25	17	19	28	56	56	24	20	23	20	21	22
Last	of	Sig	Pep	24	16	18	27	25	25	23	19	22	19	20	21
First	of	Sig	Pep P	-	1	1	1	1	1	1		1	1	-	1
AA SEO	í A	ÿ;	X	1746	1408	1747	1409	1410	1748	1411	1749	1412	1413	1414	1415
5' NT of First	AA of	(2)	Pep	48	106	107	184	105	122	92	2 8	38	135	43	969
5' NT of First	of Start AA of	Clone Codon		48	106	101	184	105	122	92	84	38	135	43	969
3, NT	of	Clone	Seq.	1239	1304	1333	1926	1773	1797	1148	1140	912	563	413	1306
S' NT		Clone	Seq.			2	-	-	92	0	22		-	-	-
	Total	Į,	Seq.	1239	1304	1333	1926	1773	1797	1147	1140	912	563	413	1306
NT SEO	í A	Ö	X	849	511	850	512	513	851	514	852	515	516	517	518
		Vector		pCMVSport 3.0	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	pSport1	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR
ATCC	Deposit	No:Z and	Date	209463 11/14/97	209124 06/19/97	209124 06/19/97	PTA-499 08/11/99	209889 05/22/98	209889	209124 06/19/97	209124 06/19/97	97974 04/04/97 209080 05/29/97	PTA-322 07/09/99	209177 07/24/97	209511 12/03/97
	cDNA	Clone ID		HSYBG37	HSZAF47	HSZAF47	HT3SF53	HT5GJ57	HT5GJ57	HTADX17	HTADX17	HTDAF28	HTEAF65	HTEBI28	HTEDF80
	Gene	No.		200	501	501	502	503	503	504	504	505	909	507	208

Last	₹	of PRF	233	77	46	257	257	24	82	99	163	124	312	142	113
First AA	of	Secreted	24	24	25	20	20	2	2	2	30	29	26	25	25
Last	of	Sig	23	23	24	19	19	_	-	-	29	28	25	24	24
First Last	of	Sig	-	-	-	-	-	1	-	-	-	1	-	-	1
AA	[′] 白	ÿ >	1416	1750	1417	1418	1751	1752	1753	1754	1419	1755	1420	1421	1756
5' NT of First	AA of	Signal Pen	19	19	231	56	145	-	1081	029	84	41	121	188	187
S' NT	of Start	Clone Codon	19	19	231	26	145				84	41	121	188	187
3. NT			754	810	1028	978	1092	133	937	908	1075	1038	1113	738	745
s' NT	ot	Clone	1	1	-	-	1	-	754	1	50	-	-	1	1
	Total	L S	754	810	1028	978	1092	284	1494	1014	1075	1038	1113	738	745
NT SEO	A	ë×	519	853	520	521	854	855	856	857	522	858	523	524	859
		Vector	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR
ATCC	Deposit	No:Z and Date	209241	209241 09/12/97	209324 10/02/97	PTA-842 10/13/99	PTA-842 10/13/99	PTA-842 10/13/99	PTA-842 10/13/99	PTA-842 10/13/99	209224 08/28/97	209224 08/28/97	209568 01/06/98	209090 06/05/97	209090 06/05/97
	cDNA	Clone ID	HTEDY42	HTEDY42	HTEFU65	HTEGI42	HTEGI42	HTEGI42	HTEGI42	HTEGI42	HTEHR24	HTEHR24	нтенизі	нтени93	нтен093
	Gene	Š	209	509	510	511	511	511	511	511	512	512	513	514	514

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_		¥	to to		28	ļ	4	208				159				17				84		68		142		24			
D:-04 A A	FIISLAA	ot	Secreted	rormon	20	٠	CI	16				91				20				77		78		34		30			
	₹,	of	Sig	rep	19	;	4	15				15				19				21		27		33		53			
	₹,	ot	Sig	rep],	-	1								1	-			-		-		1		_			
AA	SEC	<u>A</u>	ÿ;	×	1422	9	1423	1424				1757				1758				1425		1426		1427		1428			
S' NT	S. N.I. of First SEQ			rep	22	58,6	203	156				163				155				121		365		149		285			
E C	N.C	of Start AA of	Clone Codon Signal		77	3	203	156				163				155				121		365		149		285			
	S. NI	oę	Clone	Seq.	752		1748	1094				1147				1134				531		813		1713		703			
Ш,	S. NI. 3. NI	ot	Clone	Seq.	1		-	1				1				1				ī		1				1			
		Total	Ż,	Seq.	752		1748	1094				1147				1134				531		813		1713		703			
TN S	SEC	А	Ö	X	525		526	527	!			980				861				528		529		530	_	531			
			Vector		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR				Uni-ZAP XR				Uni-ZAP XR				Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR			
(ATCC	Deposit	No:Z and	Date	209244	09/12/97	209511	97958	03/13/07	209072	05/22/97	97958	02/12/07	209072	05/22/97	97958	03/13/97	209072	05/22/97	203648	05/09/99	203570	01/11/99	209563	12/18/97	77676	04/04/97	209082	05/29/97
		cDNA	Clone ID		HTEIP36		HTEIV80	HTEIN13				HTEJN13				HTEJN13				HTELM16		HTEPG70		HTGAU75		HTGEP89	•		
		Gene	Š		515		516	517				517				517				518		519		520		521			

Last	AA	of ORF	39		39		38		38		292		8		181		822		8	45		S		11	188		
First AA	oę	Secreted Portion					16		16		27		16		23		2		21	18				23	18		
Last AA	Jo	Sig Pep					15		15		56		15		22		1		20	17				22	17		
First AA	oę	Sig Pep	-		1		1		-		1		1		-		1		1	-				-	1		
AA SEQ	Ω	ÿ ⊁	1429		1759		1430		1760		1431		1432		1433		1434		1761	1435		1762		1436	1437		
5' NT 5' NT of First	AA of	Signal Pep	47		149		231		224		99		70		527		30		335	129		202		116	124		
	of Start AA of	Codon	47		149		231		224		99		70		527		30			129				116	124		
3, NT	of	Clone Seq.	848		632		1818		2036		1632		1061		1569		2762		2694	1216		810		712	2248		
S' NT	Jo	Clone Seq.	-		103		П				20				198		1		21	-		286			1		
	Total	NT Seq.	848		632		1818		2036		1632		1901		1650		2762		2694	1216		810		712	2248		
NT SEQ	Ω	ÿ×	532		862		533		863		534		535		536		537		864	538		865		539	540		
·		Vector	Uni-ZAP XR		pCMVSport	2.0	pCMVSport	2.0	pCMVSport 2.0	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR	Uni-ZAP XR												
ATCC	Deposit	No:Z and Date	PTA-843	10/13/99	PTA-843	10/13/99	PTA-844	10/13/99	PTA-844	10/13/99	209746	04/07/98	203071	07/27/98	209853	05/07/98	PTA-868	10/26/99	PTA-868 10/26/99	PTA-842	10/13/99	PTA-842	10/13/99	209138 07/03/97	PTA-	1543	03/21/00
	cDNA	Clone ID	HTHBG43		HTHBG43		HTHCA18		HTHCA18		HTHDJ94		HTHDS25		HTJMA95		HTJML75		HTJML75	HTLBE23		HTLBE23		HTLFE42	HTLFE57		
	Gene	Š.	522		522		523		523		524		525		526		527		527	528		528		529	530		

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Last	₹	of	25	170		170		98	_		246		246		84			40		110		29		24		26
First AA	jo	Secreted	rornon	61		61		18			81		27		34			LZ		19		24		41		19
Last AA	of	Sig	rep	18		18		17			11		56		33			26		18		23		16		18
First AA	ď	Sig	rep			1		1	_		1		1		1			1		_		1		1		1
AA SEO	í A	ö;	-	1763		1764		1438			1439		1440		1441			1442		1443		1444		1445		1446
5' NT of First	AA of	Signal	rep	189		110		51			36		288		110			7		87		43		183		14
		Codon		189		110		51	·		36		288		110			7		87		43		183		14
3, NT	jo	Clone	Seq.	2214		928		534			1032		268		826			300		1466		1019		973		1430
S' NT	of to	Clone	seq.	1157		1		1			1		164		1			1		1		4		1		1
	Total	TN	veq.	2298		928		534			1032		1074		826			300		1466		1019		973		1430
NT SFO) A	ö	×	998		298		541			542		543		544	•		545		546		547		548		549
		Vector		Uni-ZAP XR	-	Uni-ZAP XR		Uni-ZAP XR			Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR			pBluescript	SK-	Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR		Uni-ZAP XR
ATC	Deposit	No:Z and	Date	PTA- 1543	03/21/00	PTA-	1543 03/21/00	PTA-	2081	00/60/90	203648	05/09/99	203570	01/11/99	PTA-	2081	00/60/90	209241	09/12/97	209368	10/16/97	209244	09/12/97	209299	09/25/97	209603 01/29/98
	cDNA	Clone ID		HTLFE57		HTLFE57		HTLGE31			HTLHY14		HTLIT32		HTLIV19			HTNB091		HTOAK16		HTODK73		HTODO72		HTOGR42
	Gene	N o		530		530		531			532		533		534			535		536		537		538		539

	_	_															
	Last	ΑĄ	ot	OR.	09	190	61	19	322	13	53	20	240	41	32	362	362
	First AA	of	Secreted	Portion	19	5 2	21	21	2	01	25	17	2	22	61	23	25
Last	¥	of	Sig	Рер	18	24	20	20	1	6	77	16	1	21	18	22	24
First	ΑA	o	Sig	Pep	1	1	1	1	1	1	1	1	1	1	1	1	1
AA	SEQ	А	Ö	Y	1765	1447	1448	1766	1767	1768	1449	1450	1769	1451	1452	1453	1770
	5' NT of First	AA of	Signal	Pep	13	155	30	23	71	1555	433	243	2	100	217	178	302
	5' NT	of Start	Codon		13	155	30	23			433	243		100	217	178	305.
	3, ZT	ot	Clone	Seq.	1433	946	1949	408	1274	1622	1499	549	1345	1294	904	1374	1507
	S' NT	of	Clone	Seq.	-			-	982	_	267	-	746	1	-	1	118
		Total	Ä	Seq.	1433	946	1949	408	1299	1669	1499	549	1369	1294	904	1374	1515
Ę	SEQ	A	ö	×	898	550	551	698	870	871	552	553	872	554	555	556	873
			Vector		Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209603 01/29/98	203081 07/30/98	PTA-843 10/13/99	PTA-843 10/13/99	PTA-843 10/13/99	PTA-843 10/13/99	209745 04/07/98	PTA-843 10/13/99	PTA-843 10/13/99	203105 08/13/98	209324 10/02/97	209511 12/03/97	209511 12/03/97
		cDNA	Clone ID		HTOGR42	HTOHD42	HTOHM15	HTOHMIS	HTOHM15	HTOHMIS	нтонт18	HTOIZ02	HTOIZ02	HTOJA73	нтолк60	HTPBW79	HTPBW79
		Gene	No.		539	540	541	541	541	541	542	543	543	544	545	546	546

	Last	AA Y	of L	Š	415	37	133	318	461	101	88	51	4	102	91	201	102
	4			딝	23	35	23	18	18	27	25	21	26	28	28	22	40
_		ot	Sig	Pep	22	34	22	17	17	26	24	20	25	27	27	21	39
-	AA	ō	Sig	Pep	1	1	1	1	1	1	1	1	1	1	1	1	1
	SEQ	А	ö	>-	1771	1454	1455	1456	1772	1457	1458	1459	1460	1461	1773	1462	1463
5' NT	of First	AA of	Signal	Pep	95	170	133	55	£\$1	334	316	376	185	175	183	217	30
	S' NT of First	of Start	Codon		92	170	133	55	153	334	316	376	185	175	183	217	30
	3' NT	oţ	Clone	Seq.	1404	652	1711	3059	2008	1963	963	911	407	1134	1162	1583	1661
	S' NT	of	Clone	Seq.	1	-	_	-	215	-	-	211		1	1	1	
		Total	Ę	Seq.	1404	652	1711	3059	2008	1963	963	911	407	1134	1162	1583	1991
Ę	SEQ	A	ö	×	874	557	558	559	875	260	561	562	563	564	876	565	995
			Vector		Uni-ZAP XR	pBluescript	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	pSport1	pSport1	Lambda ZAP	Lambda ZAP II	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR	Uni-ZAP XR
	ATCC	Deposit	No:Z and	Date	209511	209138	209641	203484	203484	209086	209852 05/07/98	209852	209651	209423	209423	209746	209603
		cDNA	Clone ID		HTPBW79	HTSEW17	HTTBI76	HTTDB46	HTTDB46	HTWCT03	HTWDF76	HTWJK32	HTWKE60	HTXCV12	HTXCV12	HTXDW56	HTXFL30
		Gene	Š.		546	547	548	549	549	550	551	552	553	554	554	555	556

	st	~	f	J	~	Т.	<u> </u>	Т,		Ţ	951		1	5		٦,	8	T,	 89	1	151	7	142	1	119		206	Τ,		٦
	Last	₹	ا و	Š	42		7.3	-	 첫	_ ; _};	<u>-</u>		ŀ	-			<u> </u>	4	<u> </u>	4	<u>:</u>	4	-	\dashv	_	4	<u>~</u>	4	4	\dashv
	First AA	of	Secreted	Portion	% %	١	<u>∞</u>	,	8 	į	/7			17			29		53		21		23		23		20			
Last	AA	of	Sig	Pep	33		11	ļ	17		8			26			78				8		- 55		77		61	1	8 —	
First	₹	o	Sig	Pep	-		—		_	ļ	-						-		_		-				-		_			
	SEQ	A	ö;	7	1464		1465		1774		1466			1775			1467		1776		1468		1777		1778		1469		1470	
S' NT	of First	AA of	Signal	Pep	169		1085		197		46			74			190		182		786		<u>4</u>		55		74		302	
	S' NT	of Start	Clone Codon		169		1085		197		49			74			190		182		286		<u>4</u>		55		74		302	
	3, NT	Jo	Clone	Seq.	1209		2135		1265		1193			1012			518		539		853		754		<i>L</i> 99		1757		2234	
	S' NT	Jo	4)	Seq.	1		-		-		-						-		-		-		-		1		99		569	
		Total	Ϋ́	Seq.	1209		2135		1265		1193			1012			518		539		853		754		<i>L</i> 99		1757		2234	
Ę	SEQ	А	ÖN	×	295		268		877		569			878			570		879		571		880		881		572		573	
		•	Vector		Uni-ZAP XR		ZAP Express		ZAP Express		pSport1			pSport1			pSport1		pSport1		Lambda ZAP	П	Lambda ZAP	п	Lambda ZAP	п	Lambda ZAP	П	Lambda ZAP	ш
	ATCC	Deposit	No:Z and	Date	203364	10/19/98	209407	10/23/97	209407	10/23/97	PTA-	1543	03/21/00	PTA-	1543	03/21/00	209852	05/07/98	209852	86/10/50	209568	01/06/98	209568	86/90/10	209568	01/06/98	209746	04/01/98	209580	01/14/98
		cDNA	Clone ID		HTXKP61		HUDBZ89		HUDBZ89		HUFBY15			HUFBY15		-	HUFEF62		HUFEF62		HUKAH51		HUKAH51		HUKAH51		HUKBT29		HUSAT94	
		Gene	° Ž		557		558		558		559			559			260		995		561		561		561		562		563	_

Γ	Last	AA	of L	ORF	615	334		522	462		174		168		53		169		48	168	43			212		101
	First AA	ō	Secreted	Portion	16	22		20	31		24		31		31		31		22	23	2			31		31
Last	¥	Jo	Sig	Pep	15	21		19	30		23		30		30		30		21	22	-			30		30
First	AA	of	Sig	Pep	1			1	-		1		1		1		1		1	1	-			1		1
	SEQ	А	ÿ;	Y	1471	1472		1473	1779		1780		1474		1781		1782		1475	1476	1477			1478		1783
S' NT	5' NT of First	AA of	Signal	Pep	270	6		280	281		179		322		322		312		57	263	581			52		81
	5' NT	of Start AA of	Codon		270	6		280	281		179		322		322		312		23	263	581			52		81
	3, NT	of	Clone	Seq.	2733	1010		2561	1997		1020		3308		3306		2194		998	2914	1769			1903		1940
	S' NT	of	Clone	Seq.	27	1		1	1098		1		1		1		1		-	78	529			1		-
		Total	Ę,	Seq.	2733	1010		2561	2025		1020		3308		3306		2194		998	2950	1769			1903		1940
NT	SEQ	А	Ö	X	574	575		576	882		883		577		884		885		578	579	580			581		988
			Vector		Lambda ZAP II	pSport1		pSport1	pSport1		pSport1		pCMVSport	3.0	pCMVSport	3.0	pCMVSport	3.0	pCMVSport 3.0	pCMVSport	pCMVSport	3.0		pCMVSport	3.0	pCMVSport 3.0
	ATCC	Deposit	No:Z and	Date	PTA-623 09/02/99	209423	10/30/97	209651 03/04/98	209651	03/04/98	209651	03/04/98	203570	01/11/99	203570	01/11/99	203570	01/11/99	209463 11/14/97	203071	PTA-	1543	03/21/00	209603	01/29/98	209603 01/29/98
		cDNA	Clone ID		HUSBA88	HUSIG64		HUSXS50	HUSXS50		HUSXS50		HWAAD63		HWAAD63		HWAAD63		HWABA81	HWABY10	HWADJ89			HWBA062		HWBAO62
		Gene	No		564	265		999	999		995		292		267		267		268	269	570			571		571

	Last	¥¥	of	ORF	371	48	12	129	75	187	187	105	105	<i>L</i> 9	61	1887	988
	First AA	ot	Secreted	Portion	49	34	11	2	19	20	20	22	22	26	26	56	26
Last	¥	of	Sig	Pep	48	33	10	1	18	19	19	21	21	25	25	25	25
First Last	ΑA	o	Sig	Pep	1	1	-	1	1	1	1	1	1	1	1	1	1
¥¥	SEQ	А	ÿ;	Y	1479	1784	1785	1786	1480	1481	1787	1482	1788	1483	1789	1484	1790
S' NT	of First	AA of	Signal	Pep	152	287	204	492	156	37	35	243	233	1342	132	75	65
	5' NT of First	of Start	Clone Codon		152	287			156	37	35	243	233	1342	132	75	65
	3' NT	of		Seq.	3878	432	794	1019	1051	1317	1315	1138	1138	1841	314	6726	3599
	5. NT	oę	Clone	Seq.		-1	-		1	3	-	-	1	1	1	1	1
		Total	Ę,	Seq.	3878	432	794	1019	1051	1317	1315	1138	1138	1841	314	6729	3599
E	SEQ	白	ÖZ	×	582	887	888	688	583	584	890	585	891	586	892	587	893
			Vector		pCMVSport 3.0 pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0								
	ATCC	Deposit	No:Z and	Date	PTA-867 10/26/99	PTA-867 10/26/99	PTA-867 10/26/99	PTA-867 10/26/99	PTA-867 10/26/99	PTA-499 08/11/99	PTA-499 08/11/99	209641 02/25/98	209641 02/25/98	209641 02/25/98	209641 02/25/98	PTA-868 10/26/99	PTA-868 10/26/99
		cDNA	Clone ID		HWBAR14	HWBAR14	HWBAR14	HWBAR14	HWBAR88	HWBCB89	HWBCB89	HWBCP79	HWBCP79	HWBDP28	HWBDP28	HWBEM18	HWBEM18
		Gene	° Ž		572	572	572	572	573	574	574	575	575	576	576	577	577

	Last	¥.	o t	Š	498	302	37	16	110	117	40	40	211	77	8	150	414
	4			5	2	37	17	11	21	21	21	21	52	19	18	23	50
Last		of	Sig	Fep	-	36	16	10	20	20	20	20	51	18	17	22	61
First	ΑĄ	Jo	Sig	Peg g		1	-	1	1	1	1	1	1	1	1		-
AA	SEQ	A	ö	×	1791	1485	1792	1793	1486	1794	1487	1795	1488	1796	1489	1797	1490
S' NT	5' NT of First	AA of	Signal	Pep	1	227	3300	622	96	85	255	319	389	394	511	306	145
	S' NT	of Start AA of	Codon			227			96	85	255	319	389	394	511	306	145
	3. NT	o	4)	Seq.	2496	1133	5811	1012	753	734	1604	796	1021	1037	985	1410	1445
	5' NT 3' NT	of	Clone	Seq.	1	36	3302	1		1	1	1	1	1	-	33	1
		Total	ĸ	Seq.	2924	1133	5811	1012	753	734	1604	962	1021	1037	985	1410	1445
E	SEQ	А	ÖN	×	894	588	895	968	589	897	590	868	591	668	592	006	593
			Vector		pCMVSport 3.0	pCMVSport	pCMVSport	pCMVSport 3.0	pCMVSport	pCMVSport	pCMVSport	pCMVSport	pCMVSport	pCMVSport 3.0	pCMVSport	pCMVSport 3.0	pCMVSport 3.0
	ATCC	Deposit	No:Z and	Date	PTA-868 10/26/99	PTA-868	PTA-868	PTA-868 10/26/99	209641	209641	PTA-868	PTA-868	203858	203858	209641	209641 02/25/98	209782 04/20/98
		cDNA	Clone ID		HWBEM18	HWBFE57	HWBFE57	HWBFE57	HWDAC39	HWDAC39	HWDAH38	НWDАН38	HWHGP71	HWHGP71	HWHGQ49	HWHGQ49	HWHGU54
		Gene	No.		577	578	578	578	579	579	280	580	581	581	582	582	583

			_				_									
Last	₹	of E	250	346	188	102	188	742	45	45	136	141	165	62	46	41
First AA	of	Secreted	rorrion	31	31	32	31	72	61	19	2	2	19	32	27	26
Last AA	of	Sig	rep	30	30	31	30	26	18	18	-	-	18	31	26	25
First AA	of	Sig	rep	1	1	1	1	1	1	1	1	1	1	-	ı	1
	['] 白	ö;	~	1491	1492	1798	1799	1493	1494	1800	1801	1802	1495	1496	1497	1498
5' NT AA 5' NT of First SEQ	AA of	0)	rep	33	131	209	101	169	. 39	29	3	1	129	190	157	319
S' NT	of Start	Codon		33	131	209	101	169	39	29			129	190	157	319
3' NT	of	Clone	Seq.	1699	1529	1796	2136	3282	1218	1203	596	851	831	3337	1440	838
S' NT 3' NT	of	Clone	Seq.	1	95	-	-	-		-	528	791	-	-	1	1
	Total	Ż,	veq.	1699	1529	1796	2136	3282	1218	1203	1144	1120	831	3337	1440	838
NT SEO	白	ÿ;	×	594	595	901	905	969	597	903	904	905	598	599	009	601
		Vector		pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pCMVSport 3.0	pSport1	pSport1	pSport1	pSport1	pSportl	pCMVSport 3.0	Uni-ZAP XR	Uni-ZAP XR
ATCC	Deposit	No:Z and	Date	PTA-499 08/11/99	203181 09/09/98	203181 09/09/98	203181	203027 06/26/98	PTA-884 10/28/99	PTA-884 10/28/99	PTA-884 10/28/99	PTA-884 10/28/99	203081 07/30/98	203517 12/10/98	209580 01/14/98	203570 01/11/99
	cDNA	Clone ID		HWHGZ51	HWHHL34	HWHHL34	HWHHL34	НЖНОЅ55	HWLEV32	HWLEV32	HWLEV32	HWLEV32	HWLIH65	HYAAJ71	HYBAR01	HYBBE75
	Gene	No.		584	585	585	585	586	587	587	587	587	588	589	290	591

				ZZ					S' NT	AA	First	Last		
		ATCC		SEO		5' NT	3. NT	5' NT	of First	SEQ	AA	₽¥	5' NT 3' NT 5' NT of First SEQ AA AA First AA Last	Last
dude		Denosit		Δ	Total	of	Jo	of Start	AA of	А	jo ,	ğ	jo	¥
2	Clone ID	No:Z and	Vector	ÖZ	Ż	Clone	Clone	Codon	Signal	ö	Sig	Sig	Secreted	ot
<u>;</u>		Date		×	Seq.	Seq.	Seq.		Pep	>	Pep	Pep	Portion	Š
592	HAPSA79	PTA-	Uni-ZAP XR	602			4386	468	468	1499	-	30	31	310
		1543									•,,-			
		03/21/00										7	,	7
592	HAPSA79	PTA-	Uni-ZAP XR 906	906	4385	-	4385	468	468	1803		유 -	31	310
		1543												
		03/21/00										-		3
592	HAPSA79	PTA-	Uni-ZAP XR 907	206	4386	-	4386	468	468	1804	-	9	31	310
		1543												
		03/21/00												

Table 1B (Comprised of Tables 1B.1 and 1B.2)

The first column in Table 1B.1 and Table 1B.2 provides the gene number in the application corresponding to the clone identifier. The second column in Table 1B.1 and Table 1B.2 provides a unique "Clone ID:" for the cDNA clone related to each contig sequence disclosed in Table 1B.1 and Table 1B.2. This clone ID references the cDNA clone which contains at least the 5' most sequence of the assembled contig and at least a portion of SEQ ID NO:X as determined by directly sequencing the referenced clone. The referenced clone may have more sequence than described in the sequence listing or the clone may have less. In the vast majority of cases, however, the clone is believed to encode a full-length polypeptide. In the case where a clone is not full-length, a full-length cDNA can be obtained by methods described elsewhere herein. The third column in Table 1B.1 and Table 1B.2 provides a unique "Contig ID" identification for each contig sequence. The fourth column in Table 1B.1 and Table 1B.2 provides the "SEQ ID NO:" identifier for each of the contig polynucleotide sequences disclosed in Table 1B.

Table 1B.1

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The fifth column in Table 1B.1, "ORF (From-To)", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence "SEQ ID NO:X" that delineate the preferred open reading frame (ORF) shown in the sequence listing and referenced in Table 1B.1, column 6, as SEQ ID NO:Y. Where the nucleotide position number "To" is lower than the nucleotide position number "From", the preferred ORF is the reverse complement of the referenced polynucleotide sequence. The sixth column in Table 1B.1 provides the corresponding SEQ ID NO:Y for the polypeptide sequence encoded by the preferred ORF delineated in column 5. In one embodiment, the invention provides an amino acid sequence comprising, or alternatively consisting of, a polypeptide encoded by the portion of SEQ ID NO:X delineated by "ORF (From-Also provided are polynucleotides encoding such amino acid sequences and the complementary strand thereto. Column 7 in Table 1B.1 lists residues comprising epitopes contained in the polypeptides encoded by the preferred ORF (SEQ ID NO:Y), as predicted using the algorithm of Jameson and Wolf, (1988) Comp. Appl. Biosci. 4:181-186. The Jameson-Wolf antigenic analysis was performed using the computer program PROTEAN (Version 3.11 for the Power MacIntosh, DNASTAR, Inc., 1228 South Park Street Madison, WI). In specific embodiments, polypeptides of the invention comprise, or alternatively consist of, at least one, two, three, four, five or more of the predicted epitopes as described in Table 1B. It will be appreciated that depending on the analytical criteria used to predict antigenic determinants, the exact address of the determinant may vary slightly.

Column 8 in Table 1B.1 provides a chromosomal map location for certain polynucleotides of the invention. Chromosomal location was determined by finding exact matches

Information) UniGene database. Each sequence in the UniGene database is assigned to a "cluster"; all of the ESTs, cDNAs, and STSs in a cluster are believed to be derived from a single gene. Chromosomal mapping data is often available for one or more sequence(s) in a UniGene cluster; this data (if consistent) is then applied to the cluster as a whole. Thus, it is possible to infer the chromosomal location of a new polynucleotide sequence by determining its identity with a mapped UniGene cluster.

A modified version of the computer program BLASTN (Altshul, et al., J. Mol. Biol. 215:403-410 (1990), and Gish, and States, Nat. Genet. 3:266-272) (1993) was used to search the UniGene database for EST or cDNA sequences that contain exact or near-exact matches to a polynucleotide sequence of the invention (the 'Query'). A sequence from the UniGene database (the 'Subject') was said to be an exact match if it contained a segment of 50 nucleotides in length such that 48 of those nucleotides were in the same order as found in the Query sequence. If all of the matches that met this criteria were in the same UniGene cluster, and mapping data was available for this cluster, it is indicated in Table 1B under the heading "Cytologic Band". Where a cluster had been further localized to a distinct cytologic band, that band is disclosed; where no banding information was available, but the gene had been localized to a single chromosome, the chromosome is disclosed.

Once a presumptive chromosomal location was determined for a polynucleotide of the invention, an associated disease locus was identified by comparison with a database of diseases which have been experimentally associated with genetic loci. The database used was the Morbid Map, derived from OMIMTM and National Center for Biotechnology Information, National Library of Medicine (Bethesda, MD) 2000;. If the putative chromosomal location of a polynucleotide of the invention (Query sequence) was associated with a disease in the Morbid Map database, an OMIM reference identification number was noted in column 9, Table 1B.1, labelled "OMIM Disease Reference(s). Table 5 is a key to the OMIM reference identification numbers (column 1), and provides a description of the associated disease in Column 2.

Table 1B.2

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Column 5, in Table 1B.2, provides an expression profile and library code:count for each of the contig sequences (SEQ ID NO:X) disclosed in Table 1B, which can routinely be combined with the information provided in Table 4 and used to determine the tissues, cells, and/or cell line libraries which predominantly express the polynucleotides of the invention. The first number in Table 1B.2, column 5 (preceding the colon), represents the tissue/cell source identifier code corresponding to the code and description provided in Table 4. The second number in column 5 (following the colon) represents the number of times a sequence corresponding to the

reference polynucleotide sequence was identified in the corresponding tissue/cell source. Those tissue/cell source identifier codes in which the first two letters are "AR" designate information generated using DNA array technology. Utilizing this technology, cDNAs were amplified by PCR and then transferred, in duplicate, onto the array. Gene expression was assayed through hybridization of first strand cDNA probes to the DNA array. cDNA probes were generated from total RNA extracted from a variety of different tissues and cell lines. Probe synthesis was performed in the presence of ³³P dCTP, using oligo (dT) to prime reverse transcription. After hybridization, high stringency washing conditions were employed to remove non-specific hybrids from the array. The remaining signal, emanating from each gene target, was measured using a Phosphorimager. Gene expression was reported as Phosphor Stimulating Luminescence (PSL) which reflects the level of phosphor signal generated from the probe hybridized to each of the gene targets represented on the array. A local background signal subtraction was performed before the total signal generated from each array was used to normalize gene expression between the different hybridizations. The value presented after "[array code]:" represents the mean of the duplicate values, following background subtraction and probe normalization. One of skill in the art could routinely use this information to identify normal and/or diseased tissue(s) which show a predominant expression pattern of the corresponding polynucleotide of the invention or to identify polynucleotides which show predominant and/or specific tissue and/or cell expression.

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TABLE 1B.1

_	<u>.</u>	\neg	7	Т				Т		Т	Т					Т	Т			Т	T	T	7	Т	Т	
MIMO	Disease Reference(s):		136550, 203310, 269920, 602772		600259, 600259							181430, 600698, 600698, 600698, 600698, 600808,	602116					108725, 120700, 133171, 136836, 145981, 147141,	164953, 188070, 600957, 601238, 601846, 602216,	602477	600882	123620, 151410, 600850				109400, 132800, 132800, 154400, 186855, 223900, 253800, 253800, 278700, 602088
	Cytologic Band		6q14		7p22				•			12q15						19p13.3			3q13.33	22q11.21				9q31-q32
	Predicted Epitopes			Pro-54 to Gly-67.	Ser-39 to Gly-46,	Leu-49 to Ala-62,	Lys-79 to Ala-93,	Gly-95 to Thr-100.	Ala-29 to Thr-37,	Pro-39 to Leu-63.		Arg-21 to Leu-26,	Arg-88 to Asn-104,	Arg-111 to Ser-116,	Arg-154 to Lys-160,	Cys-164 to Asp-169.	Arg-21 to Leu-26.	Thr-24 to Gly-42,	Glu-53 to Gly-58.			Ser-201 to Tyr-217.		Arg-28 to Asn-33.	Pro-96 to Ser-106.	Ser-24 to Trp-30.
	AA SEQ ID	NO: Y	908	606	910				1500		911	912					1501	913			914	915	1502	916	917	918
	ORF (From-To)		125 - 262	157 - 375	115 - 414			•	116 - 346		146 - 538	229 - 774	•			-	128 - 382	97 - 285			117 - 266	461 - 1114	135 - 353	244 - 378	35 - 463	166 - 255
		» No ×	=	12	13				603		14	15					604	16			17	18	605	19	20	21
	Contig ID:		745365	544957	1352227				589947		520498	1352262					637786	637942			637482	891114	731877	220689	757866	381942
	Gene cDNA Clone No: ID		H2CBG48	H2MAC30	H6EAB28				H6EAB28		H6EDF66	H6EDX46					H6EDX46	HABAG37			HACBD91	HACCI17	HACCI17	HADAO89	HADCP14	HAGAI85
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	18,4,9					8q12.1	4						3p14.3-p14.1					5q31.3		1£p2							
Arg-30 to Tyr-39.	Pro-56 to Leu-62, Pro-86 to Asp-91.					Ile-40 to Lys-45.	Lys-29 to Val-34,	Cys-94 to Asp-99,	Ser-102 to Val-107,	His-13 to Jen-18	Cvs-36 to Glv-43.		Met-1 to Ser-7,	And Al to Mar 40	Asp-41 to Met-46, Pro-61 to Ser-67,	Pro-121 to Trp-130, His-161 to Lys-181.		Pro-70 to Arg-77, Tyr-102 to Thr-107.		Asn-27 to Leu-47,	Gln-81 to Lys-88,	Asp-93 to Lys-102,	Asn-107 to Leu-116,	Met-129 to Glu-141,	Glu-150 to Asp-157,	Lys-176 to Glu-185,	Glu-333 to 1 yr-349,
919	920	1503	1504	1505	1506	921	922			973	924	925	926	}			927	928	1507	929							
161 - 75	34 - 309	335 - 610	452 - 466	146 - 187	321 - 341	65 - 214	124 - 1026			11 - 211		93 - 245	435 - 980				325 - 525	311 - 1261	1 - 54	128 - 1468							
22	23	909		809			25			26	27	78	29	ì			30	31	610	32							
626997	1026956	864914	902027	902056	902025	456414	534165			544066	823509	635412	635357				490848	727543	371337	422672							
HAGAM64	HAGAN21	HAGAN21	HAGAN21	HAGAN21	HAGAN21	HAGBZ81	HAGDG59			HAGDC20	HAGEGSI	HAHDB16	HAHDR32				HAB071	HAIBP89	HAIBP89	HAICP19							
12	13					14	15			1,4	12	18	61	`			20	21		22							

									-	33 157640, 174900, 236730, 600512			•		152200, 167000, 600320, 600883, 602544																
										10q23.33					6q27																
Cys-393 to Leu-403,	Gln-423 to Gly-429.	Glu-28 to Gly-45,	Ser-63 to Gly-69,	Gln-96 to Trp-104,	Gly-112 to Pro-117,	Arg-121 to Pro-128.	Cys-25 to Ile-31,	Cys-85 to Asn-91.		Gly-19 to Ser-27,	Gln-39 to Gly-45,	Gln-48 to Ala-55,	Ala-75 to Thr-80,	Thr-198 to Gly-211.	Asp-31 to Pro-36,	Ser-88 to Gln-95,	Ala-163 to Glu-171.	Asp-31 to Pro-36,	Ser-88 to Gln-95.		Met-1 to Ser-6.	Pro-27 to Leu-41.	Glu-42 to Pro-53,	Ser-67 to Tyr-79,	Phe-137 to Leu-143,	Ser-180 to Arg-186,	Trp-188 to Gly-195,	Pro-210 to Arg-216,	Thr-222 to Asp-243.	Glu-42 to Pro-53, Ser-67 to Thr-73	JOEI-U/ 10 1111-12,
		930					931		932	933					934			1508		1509	935	936	937							1510	
		274 - 693					43 - 324		262 - 423	49 - 1872					136 - 711			115 - 651		323 - 349	279 - 518	100 - 489	59 - 850							54 - 329	
		33					34		35	36					37		_	611		612	38	39	40							613	
		676933					823516		638516	618530					904749			985006		618906	647105	587261	1352278							684272	
		HAIFL18				-	HAJAF57		HAJBR69	HAJBZ75					HAMFC93			HAMFC93		HAMFC93	HAMFK58	HAPNY86	HAPPW30							HAPPW30	
		23					24	i	25	26					27						28	59	30								

		11, 173610, 601518,																													
		1923.1-924.1 107300, 131210, 136132, 145001, 173610, 601518,	601652																				138160, 138160, 177400								
		1q23.1-q24.1	<u>vo</u>							×													3q26.2-q27.1								
Ala-84 to Leu-90.		Lys-26 to Tyr-33,	Arg-44 to Ile-49,	Ser-53 to Lys-71,	Lys-86 to Pro-91.	Lys-26 to Tyr-33,	Arg-44 to Ile-49,	Ser-53 to Lys-71,	Lys-86 to Pro-91.		Lys-25 to Ser-36,	Ser-53 to Glu-60,	Thr-70 to Arg-75,	Arg-111 to Thr-119,	Lys-204 to Leu-248.	Lys-25 to Ser-36,	Ser-53 to Glu-60,	Thr-70 to Arg-75,	Arg-111 to Thr-119,	Glu-161 to Leu-189.	Ile-25 to Trp-30.	Arg-49 to Gln-56.	Trp-25 to Gln-30,	Pro-50 to Gln-57,	Pro-93 to Glu-101,	Arg-114 to Cys-121,	Ser-123 to Gln-129,	Ile-177 to Arg-182.	Ser-35 to Ser-44,	Ser-86 to Leu-91,	Asp-143 to Leu-150,
	938	939				1511				940	941					1512					942	943	944						945		-
	132 - 350	94 - 456				103 - 432				216 - 377	97 - 840					899 - 66					252 - 446	247 - 417	37 - 585						143 - 1300		
	41	42				614				43	4					615					45	46	47						48		
	587601	1300782				381953				603947	1352276					667830					635514	603948	748244						845965		
	HAPQT22	HASAV70				HASAV70				HASCG84	HATAC53					HATAC53					HATBR65	HATCB92	HATCP77						HATDF29		
	31	32		_						33	34										35	36	37						38		

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	11								14q32							4			20q11.21							
Lys-166 to Ser-171, Ser-208 to Gly-213, Lys-239 to Leu-244, Glu-317 to Asn-324.				Gln-33 to Gln-41,	Asp-49 to Arg-58.	Arg-1 to Trp-10.	Arg-31 to Ala-39.		Gln-66 to Cys-71,	Inr-/6 to Giy-81, His-87 to Asp-92.	Pro-12 to Phe-18,	Ser-139 to Pro-146,	Asp-162 to Arg-173,	Thr-188 to Glu-204, Lys-245 to Gly-258.					Lys-39 to Asn-48,	Arg-63 to Gly-68,	Pro-101 to GIR-106.	Lys-39 to Asn-48.	Met-1 to Tyr-8.	His-24 to Ala-29,	Glu 42 to Glu 49,	Arg-63 to 1 nr-80,
	946	1513	1514	1515			1517	947	948		949				950	951	1518	952	953			1519	954	955		
	130 - 336	131 - 337	723 - 812	- 1176		1 - 675	2 - 634	241 - 402	60 - 392	·	6-779				87 - 233	88 - 693	629 - 68	176 - 247	71 - 661			20 - 300	862 - 589	98 - 535		
	49	_	617	_		619	620		51		52					54	↓		56		_	622	57	58		
	974065	859456	898321	889305		795099	794272	565618	625916		843036				553553	1352403	1045580	420036	848016			699815	553678	963208		
	HATDM46	HATDM46	HATDM46	HATDM46		HATDM46	HATDM46	HATEE46	HBAF133		HBAFV19			,	HRAMB34	HBCPB32	HBCPB32	HBHAD12	HBHMA23			HBHMA23	HBIBW67	HBIMB51		
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Gln-100 to Lys-119, Lys-141 to Gln-146.	His-24 to Ala-29, Glu-42 to Glu-49.	Gly-32 to Gly-37, Glu-78 to His-87.	Tyr-102 to Ala-107,	Pro-115 to Val-122,	Lys-164 to Tyr-170.	Gly-32 to Gly-37,	Glu-78 to His-87,	Tyr-102 to Ala-107,	Pro-115 to Val-122,	Lys-164 to Gln-171.	Gly-32 to Gly-37,	Glu-78 to His-87,	Tyr-102 to Ala-107,	Pro-115 to Val-122.		Lys-82 to Pro-87,	Leu-110 to Lys-129.	Lys-82 to Pro-90.	Asp-30 to Val-40.	Gln-23 to Asn-31,	Tyr-42 to Ser-58.		Tyr-123 to Tyr-131,	Cys-134 to Ser-145,	Tyr-234 to Tyr-244.	Ile-69 to Pro-74.	Pro-29 to Gly-46, Lys-48 to Gly-55,
	1520	926				1521					1522				957	958		1523	626	096		196	962			963	964
	93 - 485	57 - 578				71 - 592					100 - 732				20 - 142	157 - 756		137 - 472	548 - 670	133 - 387		87 - 227	217 - 951			74 - 298	66 - 803
	623	59				624					625				09	19		626	62	63		64	65			99	└
	672711	1352386				961712					892924				460392	1130660		544980	778065	561723		638410	732111			828130	1125802
	HBIMB51	HBINS58				HBINS58					HBINS58				HBJFU48	HBJID05		HBJID05	HBJIY92	HBJJU28		HBJLC01	HBJLF01			HBJLH40	HBJNC59
		49													20	51			52	53		54	55			56	57

255800, 256700																					.1 256540, 600281, 600281											
Gly-80,	Lys-100 to Pro-115,	Arg-121 to Gly-127,	Asn-139 to Gly-149,	Ser-179 to Arg-185,	to Gly-196,	Lys-219 to Gly-224.	Gly-46,	Gly-55,	Gly-80,	, Asn-99.	Gly-46,	Gly-55,	Gly-80,	Lys-100 to Pro-115,	Arg-121 to Gly-127,	Asn-139 to Gly-149,	Ser-179 to Arg-185,	Asp-191 to Gly-196,	Lys-219 to Gly-224.		Lys-6, 20q12-q13.1	Cys-30 to Cys-39,	Glu-95 to Cys-100,	Val-102 to Phe-113,	Cys-121 to Gly-127,	Val-216 to Arg-224,	to Asn-247.	Lys-6,	Cys-30 to Cys-39,	Glu-95 to Cys-100,	Val-102 to Phe-113,	Cys-121 to Gly-12/,
Lys-67 to Gly-80,	Lys-100	Arg-121	Asn-139	Ser-179 t	Asp-191	Lys-219	1524 Pro-29 to Gly-46,	Lys-48 to	Lys-67 to	Gly-89 to Asn-99	1525 Pro-29 to Gly-46,	Lys-48 to	Lys-67 to	Lys-100	Arg-121	Asn-139	Ser-179	Asp-191	Lys-219	965	966 Met-1 to Lys-6,	Cys-30 t	Glu-95 to	Val-102	Cys-121	Val-216	Pro-236	1526 Met-1 to Lys-6,	Cys-30 t	Glu-95 t	Val-102	Cys-121
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								17q22-q23															16q22.1				
Val-216 to Arg-224, Pro-236 to Asn-247.	Met-1 to Lys-6,	Cys-30 to Cys-39,	Glu-95 to Cys-100,	Val-102 to Phe-113,	Cys-121 to Gly-127,	Val-216 to Arg-224, Pro-236 to Asn-247		Arg-36 to Pro-43.			Val-34 to Lys-46,	Glu-67 to Trp-72.	Val-34 to Leu-48,	Val-51 to Gly-67,	Lys-74 to Asp-81,	Thr-93 to Glu-98,	Ser-138 to His-149,	Ala-186 to Gln-201,	Pro-257 to Arg-2/1.		Cys-56 to Ser-63,	Met-67 to Leu-73.	His-44 to Pro-50,	Glu-90 to Glu-96,	Gln-111 to Glu-117,	Ser-143 to Gly-151,	Ala-154 to Leu-166,
	1527			<u> </u>			196	896	-	696	970		1528							971	972		973				_
	47 - 799	•					302 - 466	560 - 733		137 - 388	168 - 413	-	173 - 1018			,				139 - 231	74 - 340	-,-	166 - 1125				
	630						92	71		72	73		631							74	75		9/				
	1049830						793786	842802		625923	1306706		598022							520435	520329	_	634016				
	HBOEG11		•		,		HBOEG69	HBXFL29		HCACU58	HCACV51		HCACV51							HCDBW86	HCE1Q89		HCE2F54				
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	120070, 1201									176261, 601399							176830, 1768			,				·	104770, 1076	191315, 6014	·			
	2q36.1									21q22.2		22q13.33					2p23.3								1q21.3					
Pro-199 to Ala-216, Gly-264 to Asp-272.	Lys-50 to Asp-66,	PTO-08 TO CIU-//,	Glu-102 to Glu-107,	Glu-131 to Leu-146,	Ala-175 to Glu-183,	Phe-205 to Lys-216,	Val-263 to Thr-281,	Pro-304 to Ala-313.	Lys-50 to Leu-69.	Asn-28 to Pro-34.	Gln-189 to Gly-195.	Met-1 to Ala-8,	Ser-51 to Leu-62,	Pro-70 to Lys-78.	Met-1 to Ala-8.			His-18 to Arg-26,	Tyr-53 to Ser-58,	Glu-72 to Leu-82,	Glu-95 to Asp-106,	Asp-146 to Ser-152,	Ser-180 to Gly-185.	Tyr-30 to Ser-40.	Gly-36 to Thr-41,	Pro-99 to Cys-106.		His-12 to Lys-18,	Ala-20 to Ala-26,	Arg-30 to Trp-52.
	974								1529	975	926	21.6			1530	826	626	1531						086	981		1532	1533		
	165 - 1175		•						165 - 482	134 - 316	188 - 862	12 - 281			5 - 274	243 - 338	352 - 915	19 - 1023						10 - 168	117 - 437		500 - 583	156 - 317		
	11	***							632	28	79	8			633	81	82	634			•			83	84		635	636		
	728432								494346	634967	748245	1143407			1046853	425212	684780	879178						658737	941941		893535	460407		
	HCE3G69								HCE3G69	HCEEA88	HCEFB69	HCEFB80			HCEFB80	HCEGR33	HCEMP62	HCEMP62						HCENK38	HCEWE17	_	HCEWE17	HCEWE17		
	29									89	69	70				71	72			,				73	74					

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Ser-17 to Gln-22.	Glu-32 to Tyr-37, Gln-68 to Ser-76.	Arg-35 to Gly-44.			Val-34 to Leu-39,	Ser-64 to Cys-74,	Ser-86 to Lys-94,	Gln-133 to Asn-143,	Pro-160 to Asp-169.	Val-34 to Leu-39,	Ser-64 to Cys-74,	Ser-86 to Ser-95,	Arg-128 to Ala-136.	Pro-61 to Asp-68.		Pro-25 to Ser-30, Thr-36 to Ser-47.	Ser-61 to Trp-67.			Pro-39 to Leu-44,	Gln-80 to Pro-93,	Pro-153 to Pro-158.	Pro-39 to Leu-44,	Gln-80 to Pro-93,	Pro-153 to Pro-158.	Pro-12 to His-25.		
982	983	984	586	986	286					1534				886		686	066	1535	991	992			1536			1537	993	1538
166 - 321	217 - 507	31 - 207	254 - 385	28 - 219	1130 - 1636					180 - 623				148 - 414		136 - 279	215 - 583	209 - 421	139 - 279	36 - 512			40 - 516			1 - 318	381 - 386	1702 - 1710
85	98	87	88	68						637				91		92	93	638	94	95			639			640	96	641 1702
543370	553587	526599	430297	553582	1352270					658672				740781		562010	862367	562034	630649	1134974			1045182			1045183	911924	906285
HCEWE20	HCFCU88	HCFMV71	HCFNN01	HCFOM18	HCHINF25					HCHINF25				HCMSQ56		HCMST14	HCMTB45	HCMTB45	HCNSD93	HCOOS80			HCOOS80			HCOOS80	501202Н	нсост05
75	92	77	78	79	80									81		82	83		84	85							98	

	164731, 172400, 172400, 180901, 180901, 221770, 248600, 600918, 602716																													
	19913.1																													
				Met-24 to Gly-29,	Ala-5 / to 1 nr-03.	Glu-124 to Leu-131,	Asp-266 to Pro-271,	Asn-273 to Phe-280,	Glu-315 to Arg-321,	Pro-400 to Val-407,	Ala-446 to Pro-452,	Thr-487 to Gly-492,	Phe-517 to Gly-523,	Tyr-599 to Lys-605,	Thr-611 to Thr-626,	Met-653 to Gly-658,	Ala-686 to Thr-692.		Pro-54 to Phe-63,	Gly-115 to Gln-121,	Gln-136 to Ala-141,	Gln-164 to Leu-178,	Glu-194 to Trp-203,	Glu-215 to Arg-222,	Glu-296 to Gly-304.	Pro-54 to Phe-63,	Gly-115 to Gln-121,	Gln-136 to Ala-141,	Gln-164 to Leu-178,	Glu-194 to Trp-203,
994	995	966	266	866		1539												666	1000							1540				
88 - 204	593 - 772	102 - 296	91 - 225	80 - 319		770 - 2893									-		,	557 - 700	148 - 1176							247 - 978				
16	86	66	100	101	_	642												102	103							643				
499240	720291	499242	847040	651313		880178												550208	1352416							1115089				
HCUBS50	HCUCK44	HCUE060	HCUGM86	HCUHK65		HCUHK65												HCUIM65	HCWEB58							HCWEB58				
87	88	68	96	16														92	93											

						133701, 168500, 171650, 176930, 176930, 600623, 600811, 600958									•		142335, 152427, 163729, 176450, 190605, 600510,	600725						168450, 168450, 257200, 257200	256030				
		13,15,16,19,2,3 ,4,5				11p11.2			119								7q36							11p15.3	2q21.3	5q14.3			
Glu-215 to Asp-223.				Lys-28 to Thr-34.		Asp-48 to Ser-54.			Ala-145 to Ser-154,	Ala-258 to Tyr-263,	Ala-287 to Arg-297,	Thr-306 to Met-316.	Ala-145 to Ser-154,	Ala-258 to Tyr-263,	Ala-287 to Arg-297,	Thr-306 to Met-316.	Glu-67 to Asn-74,	Glu-88 to Asn-93,	Lys-95 to Ser-105,	Arg-152 to Ala-164,	Ala-204 to Arg-210,	Phe-254 to Thr-262,	Pro-295 to His-311.		Phe-48 to Tyr-54.	Gln-33 to Trp-49,	Gly-161 to Gly-172,	The-207 to Arg-212,	ASR-414 to Val-419,
	1541	1001	1542	1002	1003	1004	1005	1543	1006				1544				1007							1008	1009	1010			
	155 - 886	194 - 226	187 - 219	37 - 159	138 - 335	568 - 894	154 - 657	163 - 309	199 - 1440				204 - 1445				287 - 1234							132 - 377		259 - 3084			
	6 4 4	<u>\$</u>	645	105	106	107	108	646					647				110 287							111	112	113			
	889268	1042325	901913	553621	628256	499233	765171	637576	902513				812764				547772							692269	890457	1062783			
	HCWEB58	HCWGU37	HCWGU37	HCWKC15	HCWLD74	HDHEB60	HDHIA94	HDHIA94	HDHMA45				HDHMA45			•	HDHMA72							HDLAC10	HDLA028	HDPBA28			
		94		95	96	62	86		66								90							101	102	103			

Val-423 to Gln-428, Val-436 to Gly-441, Lys-467 to Leu-478, Phe-497 to Ser-508, Met-550 to Gly-560, Glu-688 to Thr-697, Ile-711 to Gly-720, Ala-747 to Gly-759, Leu-785 to Phe-791, Ser-795 to Gln-800, Thr-808 to Lys-813, Ser-821 to Phe-832, Thr-879 to Glu-889, Cleu-898 to Gln-904, Gln-934 to Met-941.	Trp-49, Odly-172, Arg-212, Val-419, Gdly-441, Leu-478, Ser-508, Odly-560, Thr-697, Glly-720, Glly-759, Ofln-800.	Leu-38, Cys-58, His-80, Pro-102,
Val-423 to Gln-428, Val-436 to Gly-441, Lys-467 to Leu-478, Phe-497 to Ser-508, Met-550 to Gly-560, Glu-688 to Thr-697, Ile-711 to Gly-720, Ala-747 to Gly-720, Ala-747 to Gly-759, Leu-785 to Phe-791, Ser-795 to Gln-800, Thr-808 to Lys-813, Ser-821 to Phe-832, Thr-879 to Glu-889, Leu-898 to Gln-904, Gln-934 to Met-941.	1545 Gln-33 to Trp-49, Gly-161 to Gly-172, Ile-207 to Arg-212, Asn-414 to Val-419, Val-423 to Gln-428, Val-436 to Gly-441, Lys-467 to Leu-478, Phe-497 to Ser-508, Met-550 to Gly-560, Glu-688 to Thr-697, Ile-711 to Gly-720, Ala-747 to Gly-759, Leu-785 to Gln-800.	1011 Gin-30 to Leu-38, Arg-50 to Cys-58, Lys-75 to His-80, Ala-93 to Pro-102,
	69 - 2894	461 - 1126
	866429 648	1352298 114
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Leu-115 to Gly-131, Leu-156 to Gly-161, Glu-217 to Pro-222.	Gln-30 to Leu-38, Asn-75 to Thr-86.	Leu-56 to Thr-62, Gln-80 to Pro-87, Gly-106 to Gln-113, Pro-122 to Lys-127, Gln-138 to Asn-146, Cys-280 to Lys-287, Asp-306 to Gly-311, Asp-321 to Thr-326, Gly-337 to Pro-345, Thr-354 to Glu-535, Asn-451 to Ile-457, Lys-526 to Glu-532, Gln-591 to Glu-603. Leu-56 to Thr-62, Gln-80 to Glo-87, Gln-80 to Gln-113,	Pro-122 to Lys-127, Gln-138 to Asn-146. Leu-56 to Thr-62, Gln-80 to Pro-87, Gly-106 to Gln-113, Pro-122 to Lys-127, Gln-138 to Asn-146, Cys-280 to Lys-287, Asp-306 to Gly-311, Asp-321 to Thr-326, Gly-337 to Pro-345, Thr-354 to Gln-359,
	1546	1012	1548
	460 - 786	93 - 1928	165 - 1535
	649	115	651
	745403	1160316	886067
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		181430, 232800, 600808, 601284, 601769, 601769, 602116		19q13.2-q13.3 107741, 113900, 122720, 122720, 126340, 126391, 130410, 134790, 138570, 160900, 164731, 173850, 207750, 248600, 258501, 600040, 602225, 602225	160781, 181405				120220, 120240, 123580, 151385, 171860, 190685, 236100, 236200, 240300, 267750, 600065, 601072, 601145				138300, 240400, 602629				
		181430, 602116		107.7 1304 2077	1607				120220 236100 601145				1383				_
		12q13.3		19q13.2-q13.3	12q24.21				21q22.3				8p21.2-p21.1				
Asn-451 to Arg-456.	Pro-22 to His-33, Ser-42 to Trp-48.	Pro-23 to His-34, Thr-64 to Trp-71.	Pro-23 to His-34, Thr-64 to Trp-71, Lys-245 to Ala-252.	Ser-128 to Thr-133, Thr-158 to Thr-166, Leu-168 to Gly-175, Ala-179 to Asp-196.	Met-1 to Ser-7, Asp-32 to Pro-43, Ser-96 to Arg-102.		Gly-2 to Glu-7, Arg-27 to Gly-34.	Pro-27 to Gly-34.	Arg-15 to Val-22.	Pro-41 to Ala-55.	Glu-35 to Lys-44, Cys-83 to Gly-88.	Ala-107 to Ser-112.	Ala-88 to Gln-98.	Met-1 to Ser-8.	Gln-22 to Gln-44,	Ala-90 to Gly-95, I vs-137 to Tm-146	Arg-171 to Asp-181,
	1013	1014	1549	1015	1016	1017	1018	1019	1020	1550	1021	1022	1023	1024	1025		
	182 - 343	76 - 1809	76 - 870	175 - 765	345 - 701	256 - 480	245 - 367	196 - 369	59 - 1633	259 - 438	20 - 304	15 - 1469	118 - 573	252 - 980	91 - 1791		
	116	117	652	118	119	120	121	122	123	653	124	125	126	127	128		
	460682	837699	604114	588697	704067	823355	460679	704487	879325	603517	637585	637586	897276	683371	1352319		
	HDPC025	HDPCY37	HDPCY37	HDPFF39	HDPGK25	HDPGP94	HDPHI51	HDPJF37	нррлм30	HDPJM30	HDPNC61	HDPND46	HDPOE32	Н ФРОН06	HDPOZ56		
	106	107		108	109	110	Ξ	112	113		114	115	116	117	118		

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Glu-370 to Ser-380, Asp-447 to Gly-452, Gln-463 to Trp-469, Asn-505 to Ala-511, Asp-513 to His-520, Ala-542 to Val-551, Asn-559 to His-567.	Gln-22 to Gln-44, Ala-90 to Gly-95, Lys-137 to Trp-146, Arg-171 to Asp-181, Glu-370 to Ser-380, Asp-447 to Gly-452, Gln-463 to Trp-469, Asn-504 to Ala-510, Asp-512 to His-519, Ala-541 to Val-550, Asn-558 to His-566.	Gln-22 to Gln-44, Ala-53 to Gly-58.	Lys-61 to Arg-72, Arg-95 to Tyr-100, Ala-121 to Ile-126, Asn-163 to Gly-172, Lys-183 to Asn-189, Ser-211 to His-218, Leu-251 to Val-269.	Ser-16 to Lys-23.	LJ3-01 10 ALB-12.	Lys-23 to Lys-31, Ala-38 to Ser-43.
	1551	1552	1026	1553	1027	1028
	103 - 1800	59 - 1018	271 - 1122	1003 - 1074	-1738	123 - 323
		929	129	656	130	131
	815653	743479	904765	905419	630030	1043263
	HDPOZ56	HDPOZ56	HDPPA04	HDPPA04	HDPPH47	HDPSB18
			119		120	121

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																	104770, 107670, 110700, 145001, 146760, 146790, 191315, 601412, 601652, 601863, 602491							182600, 186880, 190195, 190195, 222700, 600243,	602279, 602279					
																	10477 19131							18260	60227					
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		Lys-57 to Gly-64.	Gln-75 to Cys-80,	Glu-97 to Lys-104,	Glu-114 to Ala-119,	Thr-177 to Gln-190,	Asn-230 to Trp-240,	Glu-269 to Arg-274,	Pro-279 to Ala-286,	Pro-323 to Cys-328,	Asn-362 to Leu-367,	Thr-390 to Arg-397,	Leu 490 to Arg 495,	Gln-556 to Leu-561,	Gln-657 to Val-674.	Gln-75 to Cys-80.	Pro-29 to Lys-37.		Ser-106 to Leu-113.	Arg-20 to Lys-44,	Arg-59 to Arg-68,	Trp-74 to Lys-86,	Thr-91 to Val-102.	Glu-102 to Asn-110,	Arg-256 to Leu-266,	Pro-316 to Trp-328,	Pro-331 to Arg-336,	Met-350 to Gly-358.	Glu-136 to Pro-141,	Ala-221 to 351-221,
1555	1556	1557	1029													1558	1030	1559	1031	1032				1033					1034	
116 - 307	1525 - 1566	345 - 665	184 - 2313													227 - 1153	2356 - 2499	179 - 343	14 - 358	223 - 825	,,			39 - 1148					22 - 1602	
658	659	099	132													199		662	134	135				136					137	
903816	-	1														689129	744440	502472	638932	692917				744824					684120	
HDPSB18	HDPSB18	HDPSB18	HDPSP01													HDPSP01	HDPSP54	HDPSP54	HDPSU13	HDPTD15				HDPTK41					HDPUG50	
			122	_													123		124	125				126					127	

	178640, 216900		4835, 132700, 172490, 600968	109270, 109270, 109270, 109270, 109270, 120150, 120150, 120150, 148065, 148080, 154275, 171190,	185800, 221820, 249000, 253250, 600119, 600119, 600525, 601844
	2p11.2 17		16q13 1	3	31.
Asp-307 to Pro-312, Lys-355 to Gly-361, Phe-449 to Pro-454.	Ser-28 to Phe-33, Glu-35 to Pro-41, Lys-48 to Val-54, Pro-100 to Glu-105, Pro-107 to Glu-112, Leu-119 to Gln-125, Gly-335 to Leu-340, Ser-383 to Arg-396, Leu-417 to Lys-429, Asp-477 to Arg-482, Tyr-532 to Ser-540, Ile-542 to Asn-549.	Gly-12 to Tyr-26, Val-52 to Asp-59, Gln-88 to Asp-93, Arg-124 to Asn-129, His-193 to Arg-198, Gln-207 to Thr-213, Gln-338 to Arg-346, Ser-378 to Ala-384, Ser-413 to Arg-420, Ser-428 to Glu-434, His-443 to Ser-451, Glu-454 to Ser-461.		Pro-36 to Ser-52, Ala-63 to Pro-78.	Ala-106 to Lys-115, Glu-134 to Glu-141, Val-155 to Asn-164
	1035	1036	1037	1038	
	90 - 1739	40 - 1440	8 - 163	45 - 2453	
	881	139	140	141	
	866433	812737	796865	992925	
	HDPUH26	HDPUW68	HDPVH60	HDPWN93	
	128	129	130	131	

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Phe-199 to Gly-204,	Arg-218 to Leu-228,	G1u-230 to val-235,	Val-247 to Pro-253,	Arg-262 to Gly-276,	Thr-303 to Gln-310,	Arg-335 to Trp-342,	Glu-399 to Ala-415,	Ser 458 to Glu-466,	Arg-508 to Asp-517,	Glu-580 to Pro-585,	Gln-620 to Trp-628,	Lys-651 to Ala-657,	Gly-677 to Met-682,	Ala-712 to Leu-717.	Gly-724 to Thr-731,	Arg-770 to Gln-775.	-	Ala-63 to Pro-78,	Ala-106 to Lys-115,	Glu-134 to Glu-141,	Val-155 to Asp-164.			Ala-70 to Lys-81,	Gln-100 to Pro-105,	Val-118 to Leu-123,	Pro-166 to Pro-171,	Gly-310 to Gly-331.		Ala-70 to Lys-81,	Phe-92 to Gly-98.	-
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Tyr-62 to Thr-68, Ala-189 to Glu-197, Ala-204 to Gln-219.	Glu-25 to Gly-31, Tyr-62 to Thr-68.	Arg-45 to Ser-54, Ser-78 to Ser-83.	Leu-36 to Gly-41,	Lys-51 to Arg-56,	Arg-36 to Giy-00.	Leu-36 to Gly-41,	Lys-51 to Arg-56, Arg-58 to Gly-66.	Arg-45 to Ser-54,	Ser-78 to Ser-83.	Ser-21 to Asp-35,	Pro-47 to Pro-52,	Pro-62 to Asn-67.				Tyr-41 to Pro-46.	1045 Lys-5 to Gly-15,	Glu-188 to Pro-194,	Asp-207 to Met-216,	Cys-226 to Ser-231, Thr-256 to Thr-264.		Ser-21 to Thr-26, Thr-36 to Cys-44.		
	1563	1041	1564			1565		1566		1042			1043	1567	1568	1044	1045				1569	1046	1570	1571
	65 - 727	691 - 942	175 - 378			116 - 319		673 - 924		114 - 371			260 - 349	251 - 340	101 - 343	386 - 535	58 - 948				161 - 331	154 - 309	164 - 319	200 - 205
	999	144	<i>L</i> 99			899		699		145			146	029	671	147	148				672	149	673	674
	543618	1025421	890972			904770		902431		571078			1043391	874477	892317	635457	839264				834697	1011485	906320	857362
	HDTBP04	нртек44	HDTEK44			HDTEK44		HDTEK44		HDTEN81			HDTFE17	HDTFE17	HDTFE17	HDTGC73	HDTIT10				HDTIT10	HDTMK50	HDTMK50	HDTMK50
		134								135			136			137	138					139		

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10q23.2-q23.31 157640, 174900, 203300, 236730, 600512								76600	· ·	•															1p31.1-p22.3 600309, 601414, 602094				107776, 138079, 138079, 139191, 165240, 165240, 165240, 165240, 180104, 203740, 219800, 261670, 601472,
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10q23.2-q23.31				∞				16q22.2	6																1p31.1-p22.3				7p14-p13
			Ala-84 to Gln-93.	Ala-67 to Glu-72,	Thr-91 to Ile-100.		Arg-28 to Gly-34.	Thr-21 to Leu-26.		Gln-29 to Lys-35,	Lys-48 to Gln-54,	Arg-80 to Asp-90,	Pro-166 to Arg-173,	Glu-178 to Tyr-188,	Glu-220 to Leu-228,	Ile-246 to Pro-253,	Arg-281 to Asp-288,	Ser-305 to His-313,	Asn-319 to Asp-328,	Asp-361 to Phe-366,	Arg-372 to Tyr-377,	Gly-384 to Ser-402.	Pro-43 to Cys-52,	Lys-105 to Ser-113.	Arg-18 to Asp-27,	Leu-29 to Arg-36,	Ser-90 to Tyr-104,	Val-108 to Lys-114.	Asn-23 to Val-37.
1047	1048	1049	1050	1051		1052	1053	1054	1055	1572													1056		1057				1058
137 - 313	57 - 209	116 - 241	96 - 66	337 - 852		147 - 398	237 - 341	63 - 413	502 - 744	675 256 - 1500													201 - 953		39 - 68				161 - 286
150	151	152	153	154		155	_	_	158	675													159		160				191
722217	545008	396139	740750	638617		753229	411998	589450	1050076														834913		675382				596829
HE2DY70	HE2EN04	HE2FV03	HE2NV57	HE2PD49		HE2PY40	HE6EU50	HE8MH91	HE8QV67	HE8QV67	,												HE8UB86		HE9BK23				HE9CO69
140	141	142	143	144		145	146	147	148														149		150				151

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																								17q21.31						
Ala-22 to Lys-36.	1060 Ala-118 to Phe-124,	Arg-178 to Lys-201.	Ala-118 to Phe-124,	Arg-178 to Lys-201.	Ala-118 to Phe-124,	Thr-177 to Lys-203.	Gln-44 to Gly-51,	Gln-119 to Ala-124,	Trp-209 to Ile-223.	Gln-44 to Gly-51,	Gln-119 to Ala-124,	Trp-209 to Ile-223.		Glu-58 to Lys-63,	Lys-78 to Tyr-86,	Ala-127 to Cys-135,	Ala-159 to Asn-180,	Lys-205 to Glu-210,	Lys-221 to Lys-226,	Ser-240 to Asp-247,	Thr-258 to Glu-267.		Ser-25 to Tyr-35.					1066 Cys-26 to Leu-32,	Thr-49 to lie-55, Glu-57 to Glu-63.	Ser-39 to Asn-45,
1059	1060		1573		1574		1061			1575			1576	1062								1063	1064	1065				1066		1067
132 - 257	70 - 675		70 - 672		989 - 82		129 - 1193			136 - 1074			129 - 533	82 - 1146								48 - 176	160 - 288	645 - 806				246 - 452		51 - 467
162	163		9/9		<i>LL</i> 9		164			8/9			629	165					_			991	167	168				169		170
560625	1299935		829859		382000		1352337			838598			834400	<i>L</i> 91988								561524	526417	486120				484643		701802
HE9CP41	HE9DG49		HE9DG49		HE9DG49		HE90W20		•	HE90W20			HE90W20	HE9RM63								HEAAR07	HEBAE88	HEBBN36				HEBCM63		HEBEJ18
152	153						154							155								156	157	158				159		160

j		100710, 182290, 201475, 270200, 601097, 601097, 602666														188450, 188450, 188450													
		17p11.2														8q24.3						7p22.1					-		6
Asn-103 to Ser-109.		Pro-5 to Leu-10.	Phe-31 to Asp-38,	Asn-59 to Tyr-65,	Ser-76 to Glu-82,	Thr-96 to Cys-108,	Gln-111 to Asn-118.	Ile-40 to Cys-49,	Arg-52 to Cys-57,	Ser-94 to Trp-99,	Gly-105 to Gly-111.	Ile-40 to Cys-49,	Arg-52 to Cys-57,	Ser-94 to Trp-99,	Gly-105 to Gly-111.	Pro-46 to His-54,	Pro-61 to Lys-73,	Ser-104 to Gly-116,	Thr-151 to His-156.	Pro-46 to His-54,	Pro-61 to Lys-73.		Asp-102 to His-111,	Asn-231 to Trp-244,	Pro-255 to Gln-260,	Glu-286 to Glu-291.	Asn-36 to Gln-41,	Pro-49 to Ser-54, Cvs-65 to Ser-70.	Pro-44 to Lys-54,
	1068	1069	1070					1071				1577				1072				1578		1073	1579				1074		1075
	57 - 197	387 - 761	213 - 656					52 - 417				133 - 498				260 - 745				253 - 738		209 - 1243	402 - 1274				41 - 280		629 - 1501
	171	172	173					174				089				175				681		176 209	682				177		178
	684254	633657	777843					885637				769649				1093342				1048170		681138	340352				847372		696945
	HEEAG23	HEEAJ02	HEEAQ11					HEGAN94				HEGAN94	_			HEGBS69			_	HEGBS69		HELGK31	HELGK31	-			HELHD85		HELHL48
	191	162	163					181								165						166					167		168

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,								16p13.3												
Cys-88 to His-95, Val-103 to Tyr-108, Gln-181 to Ser-190, Thr-192 to Ile-206, Glu-233 to Ser-245, Ser-252 to Ala-286.	Pro-44 to Lys-54, Cys-88 to His-95, Val-103 to Tyr-108, Leu-146 to Pro-157, Pro-176 to Gln-184.			Tyr-21 to Asp-40,	Ser-58 to Arg-64, Thr-71 to Ser-76,	Ser-106 to Thr-112.		Pro-35 to Trp-42,	Arg-103 to Phe-110,	Ile-114 to Glu-120.	Pro-35 to Trp-42,	Pro-65 to Asp-72,	Thr-86 to Phe-93,	Ile-97 to Glu-103.	Pro-35 to Trp-42,	Pro-65 to Asp-72,	Thr-86 to Glu-92,	Pro-96 to Gly-104,	Ser-138 to Gly-134.	Cys-36 to Pro-73,
	1580	1076	1581	1077			1078	1079			1582				1583				0001	
	31 - 582	175 - 744	175 - 450	18 - 389			198 - 332	25 - 411			62 - 397				57 - 524				020	82 - 3/8
	683	179	684	180			181	182			685				989				5	183
	610025	741647	419870	028965			598018	1352368			884824				748227				207072	560633
	HELHL48	HEMAM41	HEMAM41	HEPAA46			HEQAK71	нвоссья			HEQCC55				HEQCCSS				0,4,4	HERAD40
		169		170			171	172				_							1	173

			176830, 176830, 182601, 229800, 602134										109560, 205900, 600652, 600757				113100, 124200, 147440, 158590, 160781, 163950,	163950, 251170, 276710, 600175, 601517										189800, 208400, 231675
			176830,										109560,				113100,	163950,										189800,
			2p23.3							7p22.3			19q13				12q24											4q32-q34
Pro-83 to Lys-92.			Asp-35 to Ser-41, Ser-69 to Gly-74.	Ile-23 to Ala-29.	Glu-80 to Trp-85,	Gly-91 to Asp-99,	Leu-106 to Leu-116,	Trp-120 to Pro-146.	Glu-80 to Trp-85, Gly-91 to Pro-97.			Arg-16 to Gln-28.	Glu-36 to Lys-55.		Gln-53 to Thr-60.	Ser-33 to Ser-44.	Ala-27 to Ser-38,	Pro-43 to Asn-54,	Thr-115 to Asp-121,	Leu-225 to Val-232,	Pro-247 to Gly-252,	Arg-306 to Leu-311.		Asn-20 to Gly-27,	Ser-49 to Trp-54,	Leu-95 to Thr-101,	Ala-140 to Pro-148.	Lys-13 to Asn-19, Asn-27 to Asn-35.
	1081	1082	1083	1084	1085				1584	1086	1585	1586	1087	1088	1089	1090	1001						1092	1093				1094
	60 - 197	405 - 620	123 - 662	161 - 355	256 - 717				331 - 792	336 - 1025	336 - 1025	2 - 256	53-316	199 - 549	559 - 741	240 - 425	47 - 1105						567 - 656	34 - 663				44 - 181
	184	185	186	187	188				687	189		689	190	161	192	193	194						195	196				197
	566811	526013	609827	703243	1018676				882328	1177512	1046327	1046328	847073	566712	490697	543486	579993						381980	561560				520369
	HERAR44	HESAJ10	HETAB45	HETBR16	HETEU28				HETEU28	HETLM70	HETLM70	HETLM70	HFABG18	HFABH95	HFAMB72	HFAMH77	HFCCQ50						HFCDK17	HFCEW05				HFFAD59
	174	175	176	177	178					179			180	181	182	183	184						185	186				187

	300075, 300077, 301200, 302350, 302801, 305435, 306000, 306000, 307800, 308800, 309510, 311200, 312040, 312170, 312700, 313400							148370, 238600, 238600, 238600, 238600, 600143, 601385, 602629					109690, 109690, 164770, 180071															
	Xp22.2	15			22			8p23-p22	12,12p13				5q33.2															
				•			Lys-60 to Ser-74.				Trp-30 to Val-35,	Lys-44 to Arg-49.	Thr-26 to Glu-33.	Pro-43 to Pro-50,	Asn-65 to Gly-70.	Glu-25 to Lys-33,	Glu-115 to Lys-120,	Leu-162 to Cys-169,	Glu-193 to Ile-203,	Ala-219 to Pro-225,	Glu-261 to Thr-271,	Lys-331 to Trp-336,	Lys-353 to Gly-358,	Phe-412 to Asp-417,	Gln-458 to Gly-467,	Phe-533 to Gln-538.	Glu-25 to Lys-33,	OIU-110 to 275 1-00.
1095	1096	1097	1587	1588	1098	1589	1099	1100	1101	1590	1102		1103	1104		1105						_					1891	
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198	199	200	069	169	201	692	202	203	204	693	205		206	207		208											694	
560639	513669	1011487	844413	874248	1043350	906708	889515	580829	850699	532079	270699		589522	629193		1309793											835390	
HFFAL36	HFGAD82	HFIIN69	HFIIN69	HFIIN69	HFIIZ70	HFIIZ70	HFKET18	HFLNB64	HFOXA73	HFOXA73	HFOXB13		HFPAC12	HFPA071		HFPCX09											HFPCX09	
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Glu-25 to Asn-33.		Lys-60 to Asn-67.	Lys-60 to Asn-67.	Lys-60 to Asn-67.		Pro-49 to Gly-54.	Ala-19 to Lys-34.	Met-1 to Pro-7,	Gln-21 to Glu-27,	Arg-35 to Asp-49,	Asn-66 to Leu-72,	Trp-82 to Glu-95,	Pro-158 to Asn-163.	Ser-21 to Trp-34,	Cys-68 to Gly-89,	Cys-122 to Phe-133,	Glu-188 to Leu-194.	Ser-21 to Trp-34,	Cys-68 to Gly-89,	Cys-122 to Phe-133.	Arg-30 to Gly-42,	Asp-58 to Ser-63.	Pro-31 to Pro-37.	Pro-21 to Ser-27.	His-56 to Gln-65,	Leu-80 to Ile-85.	Gly-36 to Arg-43, Glu-50 to Glu-58.	Ala-122 to Gly-128.	
1592	1106	1107	1593	_	1595		1109	1110						11111				1596			1112		1113	1114	1115		9111	1117	1118
185 - 385	103 - 243	181 - 444	181 - 723	257 - 520	257 - 517	178 - 342	158 - 262	93 - 1652						133 - 717			•	139 - 723			213 - 452		44 - 169	33 - 194	13 - 270		100 - 294	130 - 516	141 - 626
569	209	210	969	269	869	211	212	213						214				669			215		216	217	218		219	220	221
598723	526635	1309796	877637	638851	514187	520368	545012	926569						1300736			_	565076			601402		626114	553685	745381		526253	589523	1352218
HFPCX09	HFPCX36	HFPCX64	HFPCX64	HFPCX64	HFPCX64	HFRAN90	HFTBM50	HFTDL56						HFVAB79				HFVAB79			HFXAM76		HFXDJ75	HFXDN63	HFXGT26		HFXGV31	HFXHD88	HFXJU68
	199	200				201	202	203			_			204							205		506	207	208		209	210	211

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	Met-1 to Arg-8.	Lys-23 to Lys-35,	Met-40 to 1 yr-32.		Ser-18 to Gly-26.	Ser-67 to Glu-74,	Arg-81 to Val-86,	Tyr-147 to Asp-160.	Ser-67 to Glu-74,	Arg-81 to Val-86,	Tyr-147 to Asp-160.	Ser-3 to Gln-10,	Val-14 to Gln-19,	Asp-32 to His-40,	Gly-50 to His-55,	Pro-76 to Ser-87.		Glu-31 to Pro-41.	Asp-9 to Gln-17.		Glu-57 to Cys-64,	Pro-66 to Val-73,	110 100 100 100	I 74 to Tur 70	Ala-32 to I ve-55	Ala 37 to I us 55	AIA-32 10 Lys-33.	Pro-13 to His-21,	Val-25 to Gly-33.	Ser-17 to Cys-29,	Arg-32 to Arg-38.
1597	1119	1120	十	1121		1123			1598			1599					1124	1125	1126	1600	1127		1128	┰	-	-+-	-	1602		1603	
148 - 348	179 - 304	44 - 220		273 - 422	14 - 220	14 - 1144		,	28 - 540			2 - 454					144 - 224	141 - 308	88 - 324	311 - 373	334 - 633		230 160	560 023	04 218	101 345	C+C - 171	706 - 807		7 - 168	
700	222	223		224	225				701			702					227	228	229	703	230		221	222	227	_	-1	705		902	
570855	505207	634161		422794	988995	837220			838602			899864					520261	838603	638231	623588	604124		823100	000000	494099	510500	200013	902458		895682	
HFXJU68	HFXKJ03	HFXKY27		HGBF079	HGBHE57	HGBIB74			HGBIB74			HGBIB74					HGLAL82	HHAAF20	HHEAA08	HHEAA08	HHEBB10		UTUENTA 50	SCAME III	C/AMACA	THENDALIA	LITEIMINI /4	HHEMM74		HHEMM74	
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7									2q36.1			19p13.3	•	16p11.2															
	Pro-135 to Ile-145,	Trp-173 to Gly-188,	Pro-199 to Gln-219,	Ser-225 to Ala-237,	Pro-240 to Glv-253.	Ser-262 to Gly-275.	Pro-44 to Tyr-49.	His-22 to Lys-27.	Met-1 to Thr-13,	Ser-27 to Phe-34,	Arg-53 to Pro-59, Ser-77 to Ser-82.			Arg-35 to Ala-41,	Phe-55 to Arg-61,	Lys-152 to His-163.	Arg-35 to Ala-41,	Phe-55 to Arg-61,	Lys-152 to His-163.	Arg-35 to Ala-41.	Arg-16 to Arg-53,	Lys-69 to Leu-79,	Gln-81 to Thr-88,	His-106 to Cys-114,	Pro-139 to Gly-155.	Ser-61 to Trp-66,	Lys-76 to Asp-82,	Leu-116 to Tyr-124, Gln-131 to His-140.	מווי בטב זע ביני
1131	1132						1133	1134	1135			1136		1137			1604			1605	1138					1139			
63 - 191	12 - 860						115 - 291	156 - 236	269 - 517			245 - 355		259 - 750			267 - 758			45 - 320	30 - 584					132 - 1304			
234	235						236	237	238			239		240			707			708	241					242			
493724	799532						589958	498227	877639			463027		838217			897457			535730	905849					865581			
HHENK42	HHENP27						HHEN022	HHEPD24	HHEPM33			HHEPT60		HHEPU04		_	HHEPU04			HHEPU04	HIFEC49				_	HHFGR93			
224	225						226	227	228			229		230							231					232			

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			5q14.1															17							
Gln-175 to Pro-181, Trp-187 to Ser-193, Arg-273 to Leu-278, Glu-280 to Lys-286, Pro-296 to Ile-304, Arg-320 to Gly-329, Pro-345 to Pro-357.		Pro-32 to Ser-39.	Met-1 to Leu-13,	Gly-33 to Gly-46,	Pro-48 to Gly-57,	Pro-63 to Gly-68,	Pro-89 to Asn-102,	Ser-108 to Asn-113,	Pro-118 to Pro-124,	Pro-132 to Asn-141,	Pro-151 to Asn-157,	Ile-191 to Met-199,	Ser-202 to Gly-215,	Phe-222 to Pro-229.	Ser-34 to Arg-39.						Ser-39 to Ser-44.	Tyr-39 to Arg-51.			
	1606	1140	1141										•		1142	1607	1608	1143	1609	1144	1145	1146	1147	1610	1611
	130 - 840	192 - 530	58 - 762												117 - 365	132 - 416	62 - 517	270 - 536	270 - 302	253 - 411	107 - 241	71 - 238	116 - 1000	68 - 973	74 - 745
	709	243	244												245	710	711	246	712	247	248	249	250	713	714
	691402	411332	411470												1127491	1040264	1042456	662329	383547	579890	554613	695726	1299927	753270	696095
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		17			_				19q13.1			19p13.3 1	•	15,X				9p13-p12							14q32.33	8p11.2-p11.1	
		Met-1 to Cys-12.	Met-1 to Cys-12.	Tyr-1 to Ser-6,	Ala-18 to Gly-38,	Pro-56 to Pro-79,	Pro-96 to Ala-113,	Gln-116 to Gly-128.	Ala-28 to Ser-33, Ala-76 to Lys-111.	Trp-29 to Gly-42, Gly-46 to His-51.		Val-54 to Asp-59.	Val-54 to Asp-59.	Thr-26 to Asn-39.	Pro-57 to Pro-64.	Lys-1 to Gly-8.	Lys-47 to Pro-58.	Met-1 to Cys-7,	Gln-45 to Gly-61,	Gln-77 to Thr-93,	Arg-113 to Arg-118,	Ser-135 to Glu-147,	Gln-155 to Ala-161.	Thr-26 to Met-33.		Thr-36 to Leu-41.	Pro-30 to Ala-35.
1148	1149	1150	1612	1613					1151	1152	1153	1154	1614	1155	-	1616	1156	1157						1158	1159	1160	1161
247 - 393	90 - 260	238 - 405	231 - 398	457 - 1398			-		142 - 474	557 - 712	84 - 290	66 - 392	47 - 373	291 - 425	50 - 439	350 - 715	238 - 414	96 - 626						574 - 816	348 - 518	341 - 469	110 - 238
251	252	-	715	_		-			254	255	256	257	717	258	718	719	259	260						261	262	263	264
490904	553494	1031514	853442	905219					461438	487807	562729	1307789	509948	895505	821341	774300	823510	877643						545492	565675	596795	491209
HHPT165	HHSDX28	69MDSHH	HHSGW69	HHSGW69					HHTLF25	HJABX32	HJACA79	HJACG02	HJACG02	HJACG30	HJACG30	HJACG30	HJBAV55	HJBCU04						HJMB118	HIMBN89	HJMBT65	HJMBW30
241	242	243							244	245	246	247		248			249	250						251	252	253	254

Pro-42 to Cys-50, Leu-61 to Ala-66.		Asn-31 to Thr-41,	Pro-43 to Asp-49,	Glu-56 to Arg-66,	Ser-71 to Trp-80,	Asn-160 to Val-169,	Thr-192 to Val-198,	Lys-215 to Asp-226,	Asp-234 to Gly-246,	Pro-265 to Gly-273.	Asn-31 to Thr-41,	Pro-43 to Asp-49,	Glu-56 to Arg-66,	Ser-71 to Trp-80,	Pro-131 to Gly-136.	Asn-31 to Thr-41,	Pro-43 to Asp-49,	Glu-56 to Arg-66,	Ser-71 to Trp-80,	Asn-160 to Val-169,	Thr-192 to Val-198,	Lys-215 to Asp-226,	Asp-234 to Gly-246,	Pro-265 to Gly-273.	Asn-31 to Thr-41,	Pro-43 to Trp-50,	Pro-54 to Gly-59,	Pro-77 to Cys-84.	_	Pro-43 to Asp-49,	Glu-56 to Arg-66,
1162	1163	1164						·- <u>-</u>			1617					1618									1619				7 1620		
60 - 335	113 - 523	12									295 - 723					182 - 1060									184 - 441				254 - 1132		
265	566	267									720					721									722				723		
651337	564406	1352332	•								1352331					1352330									836040				838068		
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255	256	257																													

				34 120950, 120960, 130500, 133200, 138140, 168360, 171760, 171760, 176100, 176100, 178300, 187040, 230000, 255800, 600101, 600650, 600650, 600722, 600722			
			19p13.1	1p32-p34			
Ser-71 to Trp-80, Asn-160 to Val-169, Thr-192 to Val-198, Lys-215 to Asp-226, Asp-234 to Gly-246, Pro-265 to Gly-273.	Asn-31 to Thr-41, Pro-43 to Asp-49, Glu-56 to Arg-66, Ser-71 to Trp-80, Asn-160 to Val-169, Thr-192 to Val-198, Lys-215 to Asp-226, Asp-234 to Gly-246, Pro-265 to Gly-273.	Asn-31 to Thr-41, Pro-43 to Asp-49.	Gin-37 to Ala-42, Thr-51 to Ala-57, Pro-71 to His-79, Glu-124 to Arg-137, Ser-151 to Val-159.	Phe-25 to Ser-30.	Ser-25 to Ala-31, Gln-146 to Ser-151, His-231 to Asn-236.	Ser-25 to Ala-31, Gln-146 to Ser-151, His-231 to Asn-236.	Tyr-39 to Lys-58.
	1621	1622	1165	1166	1167	1623	1168
	129 - 1007	189 - 374	97 - 687	274 - 417	77 - 808	008 - 69	27 - 269
		725	268	269	270	726	271
	815661	590734	589945	565078	862030	665424	554616
	нкаан36	НКААН36	HKAAK02	HKAB184	HKABZ65	HKABZ65	HKACB56
			258	259	260		261

Thr-42 to Pro-53, Val-78 to Glu-86, Glu-103 to Met-112, Ala-124 to Gly-131, Trp-158 to Glu-168, Gln-189 to Phe-210, Ala-221 to Gly-226, Arg-274 to Asp-284, Ala-294 to Gly-299.	Thr-42 to Pro-53, Val-78 to Glu-86, Glu-103 to Met-112, Ala-124 to Gly-131.	Ser-5 to Trp-10, Ala-30 to Glu-39, Arg-66 to Trp-72, Glu-84 to Arg-97, Glu-159 to Gly-176, Ile-189 to Glu-197, Glu-206 to Arg-215, Arg-218 to Gly-227, Gly-316 to Ala-322, Pro-446 to Gly-452, Ser-488 to Gly-504, Glu-569 to Lys-575, Pro-581 to Cys-588, Ala-687 to Gln-692.	Ser-5 to Trp-10, Ala-30 to Glu-39, Arg-66 to Trp-72, Glu-84 to Arg-97.	Ser-5 to Trp-10,
1169	1624	1170	1625	1626
38 - 940	35 - 499		189 - 548	314 - 1120
272	727	273	728	729
1352202	552465	1352383	907084	907085
HKACD58	HKACD58	НКАСМ93	HKACM93	HKACM93
262		263		

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			76,	7,	15,	26.						275.				<u>.</u>						117,	138,	153,	325,	372,	396,	412,	137.		15922.2
Ala-30 to Glu-39,	Arg-66 to Trp-72,	Glu-84 to Arg-97,	Glu-159 to Gly-176,	Ile-189 to Glu-197,	Glu-206 to Arg-215,	Arg-218 to His-226.	Trp-2 to Met-16.	Gln-24 to Glv-31,	Pro-33 to Ala-38.	Cys-31 to Arg-36,	Asp-81 to His-86,	Asn-264 to Met-275	Pro-41 to Cys-47,	Phe-52 to Gly-59,	Pro-62 to His-70.	Pro-41 to Cys-47,	Phe-52 to Gly-59,	Pro-62 to His-70.	Pro-41 to Gln-50.	Thr-6 to Trp-13,	Thr-75 to Gln-80	Thr-112 to Tyr-1	Leu-133 to Pro-138,	Ala-146 to Phe-153,	Gln-319 to Ser-325,	Val-354 to His-372,	Pro-391 to Gly-396,	Val-405 to Thr-	lle-425 to Asp-437.	Thr-6 to Trp-13.	
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Xp22		1,N/A				22q12.2			3q21.2		2025					14q21.3				
1176 Lys-60 to Ala-66, Arg-169 to Cys-186, Asp-199 to Gly-205, Thr-214 to Leu-219.	Lys-60 to Ala-66, Thr-78 to Ser-83.	Asp-32 to Asp-40, Gly-67 to Pro-94.		Lys-23 to Lys-29.	Val-37 to Gly-42.	Ala-23 to Arg-36,	His-38 to Ala-46,	Pro-50 to Gly-56, Arg-85 to Val-94.		A1a-66 to I e11-73	Gl.: 27 to Cur 35	GIY-2/ 10 Cys-33.	Gln-27 to Trp-33, Gly-53 to Trp-61.	Gln-27 to Trp-33, Glv-53 to Trp-61.	Lys-17 to Ser-47.	Thr-24 to Asn-30,	Tyr-104 to Asp-122,	Ser-128 to Ser-134,	Pro-208 to Lys-222,	Lys-235 to Pro-202.
1176	1631	1177	1632	1178	1633	1179			1180	1181	_	1182	1183	1634	1635	1184				
69 - 734	18 - 332	449 - 745	470 - 754	313 - 591	27 - 197	130 - 417			336 - 500	43 - 273	000 00	677 - 07	130 - 372	153 - 395	471 - 611	64 - 906				
279	734	280	735	281	736	282			283	284	200	587	286	737	738	287				
833065	287268	762811	460631	601969	581293	625956			543510	580845	090205	607/90	1037919	880047	583524	610018				
HKDBF34	HKDBF34	HKGAT94	HKGAT94	HKGC027	HKGC027	HKISB57			HKIYH57	HKIYP40	חלאת עלים	HKMLK33	HKMLP68	HKMLP68	HKMLP68	HL2AC08				
269		270		271		272			273	274	37.6	C/7	276			277				_

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1185 Gly 4 to His-10, Asp-32 to Val-38.	Glu-37 to Trp-42,	Fre-o/ to Cry-os, Pro-101 to Leu-110.	Glu-37 to Trp-42.		Arg-28 to Gln-36.	Pro-171 to Gln-179,	Leu-218 to Lys-225, Dha-266 to Cvs-275	T 10-200 to Cys-273.	Lys-/6 to Asp-8/.	Arg-122 to Ser-139,	Met-144 to Glu-149.	Leu-68 to Lys-74,	Tyr-109 to Lys-115,	Gln-200 to Val-205,	Lys-207 to Lys-214,	Glu-237 to Ile-244,	Ala-271 to Thr-279,	Ser-317 to Ser-329,	Gln-342 to Gly-348.	Trp-35 to Trp-45,	Pro-52 to Asp-57,	Thr-73 to Arg-82,	Pro-105 to Leu-112,	Pro-115 to Arg-127,	Pro-140 to Gln-151.	Trp-35 to Trp-45,	Pro-52 to Asp-57,	1 hr-/3 to Arg-62,
1185	1186		1636	1187	1188	1189		3	1190	1191		1192		-						1193						1637		
560 - 802	146 - 478		38 - 463	303 - 470	368 - 709	43 - 870		3,	163 - 426	294 520 - 1005		99 - 1142								24 - 479						164 - 619		
288	586		739	290	291	292		1	293	294		295								296						740		
695733	1172046		1035153	815665	636083	847396			847397	753742		740755				_				846330						638939		į
HL2AG57	HLCND09		HLCND09	HLDBX13	HLDON23	HLDOW79			HLDQC46	HLDQR62		HLDOU79								HLDRM43						HLDRM43		
278	279			280	281	282			283	284		285	}							286								

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			·										602782					3p21.2-p21.3 116806, 120120, 120120, 120120, 120436, 120436, 120436, 138320, 168468, 182280, 238310, 600163, 601226	108725, 120700, 133171, 143890, 147670, 147670, 147670, 147670, 151440, 164953, 231670, 600276, 600957,	601843		165320
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Pro-105 to Leu-112, Pro-115 to Arg-127,	Pro-140 to Gln-151.	Ser-31 to Gln-41.	Tyr-28 to Phe-34, Thr-54 to Val-60,	Tyr-73 to Thr-82.			Pro-1 to Cys-8.		Met-37 to Ser-43.	Pro-55 to Gly-66, Phe-92 to Leu-103.				Lys-27 to Arg-41.	Thr-55 to Gln-66,	Asp-85 to Glu-92, Pro-125 to Ser-130,	Gly-146 to Ala-154, Leu-170 to Lys-177.		Arg-54 to Asn-65, Glu-80 to Ala-87,	Val-170 to Arg-175, Arg-185 to Arg-190.		Phe-63 to Phe-70,
		1194	1195		1196	1638	1639	1640	1197	1198	1199	1641	1200	1201	1202			1203	1204		1642	1205
		215 - 340	224 - 574		206 - 271	205 - 270	288 - 488	254 - 526	186 - 338	249 - 869	158 - 274	227 - 343	43 - 366	101 - 292	17 - 562			205 - 381	10 - 582		3-575	247 - 678
		297	298		562		_	_		301	302	744	303		305	<u>.</u>		306	307		745	308
		647430	460467		919888	895019	897241	894001	778073	791828	1019012	833665	626831	519349	520375			588446	1307726		619979	1352374
		HLDRP33	HLHFP03		HLHFR58	HLHFR58	HLHFR58	HLHFR58	HLBD68	нглсо90	HLJBJ61	HLJBJ61	HLMB076	HLMCA59	HLOBE09	,		нгорн79	HLQDR48		HLODR48	HLQEM64
		287	288		289				290	291	292		293	294	295			296	297			298

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Arg-108 to Thr-115.	Phe-63 to Phe-70, Arg-107 to Thr-114.	Met-1 to Leu-7, His-26 to Pro-33.			Gln-25 to Phe-43.		Asn-36 to Lys-42, Lys-53 to Gln-60,	Ile-64 to Ala-77,	Ala-128 to Tyr-135,	Lys-184 to Ala-199, Leu-245 to Leu-250.		Lys-17 to Glu-27,	Gln-40 to Gly 47.			Asp-55 to Asp-67, Ser-76 to His-81.	Lys-96 to Gly-103,	Met-111 to Gly-133,	Gln-222 to Ile-228,	Cys-126 to Thr-138.	Glu-165 to Gly-172,	Thr-189 to Leu-200,	Gly-222 to Gly-229, Pro-346 to Lys-354.
	1643	1206	1207	1208	1209	1210	1211				1644	1212			1213	1214				1215			
	42 - 440	76 - 264	80274	74 - 160	197 - 364	268 - 399	50 - 1006	•			313 - 441	436 - 996			326 - 748	28 - 861				212 - 1276			
	746	309	310	311	312	313	314				747	315			316	317				318	3		
	897823	853614	778074	520231	543017	638242	787530				743169	629552	_		653513	783071				022230	017100		
	HLQEM64	HLTAU74	HLTC033	HLTDV50	HLTEJ06	HLTFA64	HLTHG37				HI THG37	HLWAA17			LII WANT	HLWAE11				TH WACOO	11.WA022		
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12p13.31		7q21.13						3q25.1	1								8p23	14911.2				•	
Asp-27 to Ser-32, Pro-52 to Thr-58, Arg-63 to Asn-70, Gln-78 to Gly-83, Thr-107 to Asn-113, Thr-160 to Val-176, Ser-188 to Gly-241, Leu-248 to Pro-265, Tyr-302 to Gly-314.	Met-1 to Pro-12.					Val-38 to Cys-45.		Asp-59 to Asn-65,	I vs-72 to Tm-79	Tyr-110 to Val-121.	Ala-204 to Leu-216.	1646 Asp-59 to Asn-65,	Lys-72 to Trp-79,	Tyr-110 to Val-121,	Ala-204 to Asn-215.			Arg-48 to Asn-56,	Gly-166 to Ser-175,	Tyr-250 to Leu-261,	Glu-329 to Gly-355,	Ala-378 to Tyr-383,	GIY-550 to 1 yr 413,
1216	1217	1218	1219	1220	1221	1222	1645	1223				1646				1224	1225	1226					
38 - 1054	149 - 340	432 - 1130	155 - 328	92 - 232	222 - 365	383 - 613	254 - 418	190 - 855				205 - 852				98 - 310	267 - 533	491 - 2629					
319	320	321	322	323		325	748	•				749				327	328						
658702	566842	797609	460619	778075	460622	1352203	553507	1352163				423998				566657	596831	1352177	_				
HLWAY54	HLWB163	HLWBY76	HLWCF05	HLYAC95	HLYAF80	HLYAN59	HLYAN59	HLYAZ61				HLYAZ61				HLYBD32	HMADS41	HIMADU73					
309	310	311	312	313	314	315		316								317	318	319					

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Pro-422 to Cys-433, Gln-491 to Tyr-496, Pro-542 to Arg-551, Arg-568 to Val-582, Gly-595 to Glu-601, Gln-608 to Pro-614, Pro-669 to Pro-678.	Arg-48 to Asn-56.	Oiy-33 to Lys-41, Pro-52 to Lys-60,	Asn-81 to Ala-80, Lys-156 to Met-164,	Gln-283 to Lys-292, Glu-303 to Gly-308.	Gly-33 to Lys-41,	Pro-52 to Lys-60,	Asn-81 to Ala-86.	Asp-18 to His-25,	Phe-55 to Tyr-69.	Thr-41 to Glu-47.	Pro-53 to Thr-65.	Arg-48 to Lys-55,	Gly-61 to Glu-70.	Gln-34 to Lys-40.		Gln-85 to Lys-91,	Pro-106 to Ser-117,	Pro-124 to Ala-130,	Trp-154 to Trp-160.	Thr-187 to Lys-192, Asn-255 to Leu-262.
	1227	1771			1648			1228		1229	1230	1231		1649	1232	1233				1234
	115 - 348	4 - 1023		-	3 - 923			179 - 412		928 - 1080	180 - 428	36 - 299		95 - 217	50 - 211	34 - 699				121 - 921
	750	330		·	751			331		332	333	334		752	335	336				337
	467053	1332400			1049263			520338		411318	600406	1352290		109671	98038	560775				566720
	HMADU73	HMAMIIS			HMAMI15			HMDAE65		HIMDAN54	HMDAQ29	HMEA148		HMEA148	HMECK83	HMEED18	-			HMEET96
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11p14.3	Xq24			1925.1-932.3	9q22.33	ı																							
Pro-18 to Lys-26.	Ser-34 to Thr-39, Gln-198 to Leu-205.		Ser-20 to Ser-34, Thr-40 to Ser-46	Ser-66 to Thr-75.	Glu-78 to Asn-83,	Asp-91 to Gln-100,	Glu-122 to Ser-128,	Arg-137 to Pro-143,	Asp-157 to Asn-162,	Glu-168 to Asn-174,	Ser-199 to Gly-206,	Pro-213 to Ala-218,	Glu-251 to Thr-257,	Ser-353 to His-361,	Gly-363 to Ala-375,	Pro-382 to Phe-387,	Arg-401 to Leu-406.	Glu-78 to Asn-83,	Asp-91 to Gln-100,	Glu-122 to Ser-128,	Arg-137 to Pro-143,	Asp-157 to Asn-162,	Glu-168 to Asn-174,	Ser-199 to Gly-206,	Pro-213 to Ala-218,	Glu-251 to Thr-257,	Ser-353 to His-361,	Gly-363 to Ala-375,	Pro-382 to Phe-387,
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49 - 342	182 - 1186	221 - 370	142 - 294	63 - 491	157 - 1377													192 - 1412											
338	339	340	341	342	343													753											
603201	726831	548078	562776	566844	1309723													424085											
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Arg-401 to Leu-406.			Thr-27 to Arg-33.	His-35 to Ala-40,	Cys-62 to Giu-69,	Arg-111 to His-120.	His-35 to Ala-40,	Cys-62 to Glu-69,	Thr-74 to Ala-86,	Ser-91 to Ser-99,	Pro-106 to Gln-116,	Thr-123 to Asn-132,	His-140 to Thr-158,	Pro-160 to Ser-167,	Gly-177 to Gly-187,	Pro-190 to Gly-212.	His-35 to Ala-40,	Cys-62 to Glu-69,	Pro-85 to Gly-96,	Arg-111 to His-120.	Met-1 to Ser-6,	Pro-29 to Ser-34.	Thr-28 to Arg-49,	Ser-57 to Arg-64,	Pro-72 to His-78.	Thr-28 to Arg-49,	Ser-5 / to Arg-64.	Glu-63 to Trp-72.	Met-1 to Gly-7.
	1241	1242	1243	1244			1651							•			1652				1245		1246			1653		1247	1248
	169 - 342	28 - 141	138 - 371	137 - 499			137 - 841										135 - 497				103 - 240		134 - 445			162 - 473		111 - 344	272 - 421
	344	345	346	347			754										755				348		349			756		350	351
	597448	545427	570833	1049069			1158803										853368				461897		1127691			1028961		633637	427121
	HMSBX80	HIMSFS21	HMSGB14	HMSGU01			HMSGU01										HMSGU01				HMSHM14		HMSHS36			HMSHS36		HIMSJM65	HMSJU68
	334	335	336	337																	338		339					340	341

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Thr-27 to Arg-33, Gly-37 to Ser-42, Pro-52 to Arg-72.	Pro-43 to Leu-49, Pro-61 to Gly-66, Ser-71 to Ser-83.	Cys-15 to Gly-36.	Lys-83 to Thr-90.					His-29 to Asn-34.	Ser-46 to Gly-51.	Pro-60 to Arg-68.				Pro-18 to Gly-30,	Arg-98 to Cys-103,	Glu-106 to Arg-111,	Ser-117 to Gly-122,	Glu-132 to Ala-140,	Pro-247 to Arg-252,	Val-301 to Ala-308,	Pro-334 to Ser-339,	Arg-348 to Thr-354,	Glu 427 to Gly 439,	Gly-442 to Glu-448,	Ala-45/ to Gly-463.	Pro-18 to Gly-30.
1249	1250	1251	1654	1655	1656	1657	1658	1252	1253	1254	1659	1255	1660	1256												1991
133 - 354	306 - 560	183 - 845	413 - 724	251 - 844	62 - 379	60 - 263	60 - 128	10 - 156	106 - 381	7 - 210	20 - 202	367 - 456	129 - 185	42 - 1514												42 - 608
352	353	354	757	758	759	160	761	355	356	-	762	358	763	359												76
799540	588447	872208	723302	778820	674913	646810	381964		638159	_	542061	825421	490495	1308287												794987
HMSKC04	HMTAD67	HMUAP70	HMUAP70	HMUAP70	HMUAP70	HMUAP70	HMUAP70	HMVBN46	HMWEB02	HIMWF002	HIMWF002	HIMWFY10	HIMWFY10	HMWGY65												HMWGY65
342	343	344						345	346	347		348		349					_							

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8q22.2			12q13.12						22												10,C		
1257 Met-1 to Gly-8, Thr-33 to Cys-38,	Arg-/9 to Arg-89. Thr-43 to Arg-51.	G	Asp-21 to Ser-29.	Pro-97 to Asp-104.	Val-25 to Gly-33.				Glu-30 to Arg-44,	Asp-58 to Cys-67, Pro-70 to Pro-75.	Gly-27 to Ser-42.	Gly-27 to Ser-42.	Ala-83 to Thr-91.	Asp-15 to Tyr-21, Pro-29 to Asn-39.	1268 Gly-18 to Ser-27, Gly-46 to Asp-51.	Glu-60 to Lys-66.	Met-1 to Arg-8,	Leu-35 to Glu-41.	Asp-45 to Thr-50.			Pro-18 to Glu-25.	Ala-28 to Gly-34, Pro-57 to Thr-66.
1257	1258	1662	1259	1260	1261	1262	1263	1264	1265		1663	1664		1267	1268	1269	1270		1271	1272	1273	1274	1275
101 - 418	139 - 312	226 - 399	488 - 691	206 - 637	86 - 286	275 - 478	89 - 211	50 - 151	81 - 830		122 - 256	55 - 189	224 - 538	185 - 523	333 - 488	94 - 294	98 - 232		72 - 320	53 - 178	178 - 300	135 - 245	221 - 433
360	361	765	362	363	364	365	366	367	368		992	797	369	370	371	372	373		374	375	376	377	378
519340	1036397	842650	753337	768395	577013	410107	561488	520227	1037631		904311	904812	408334	532619	597526	494246	532622		499076	553443	410179	519120	526651
HNEAC05	HNFFR45	HNEEB45	HNFFC43	HINFGF20	HNFJF07	HNFJH45	HNGAK47	HNGAP93	HNGBC07		HNGBC07	HNGBC07	HNGBT31	HNGDJ72	HNGDU40	HINGEG08	HNGE029	•	HNGEP09	HINGHR74	HNGIH43	HNGIJ31	HNGIQ46
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				Met-1 to Gly-9.	Met-1 to Gly-9.		Pro-25 to Glu-40, Lvs-50 to His-55.			Gly-33 to Asn-44.				Lys-36 to Asp-42,	Pro-45 to Tyr-51.	Lys-36 to Asp-42.				Pro-10 to Cys-19.	Lys-97 to Gln-106,	Gln-112 to Pro-118,	Pro-123 to Lys-130,	A15 75 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Ala-33 to Asp-44.		Ala-35 to Leu-43.	Arg-45 to Thr-52, Tyr-60 to Gly-66,
1276	1277	1278	1279	1280	1665	1666	1281	1282	1283	1284	1285	1286	1287	1288		1667	1289	1668	1669	1670	1290			, 00,	1671	7671	1293	1294
77 - 217	87 - 245	321 - 545	172 - 276	27 - 200	27 - 200	596 - 877	391 - 558	328 - 492	158 - 223	258 - 392	78 - 221	231 - 368	168 - 383	274 - 426		282 - 428	52 - 162	28 - 138	166 - 252	331 - 435	160 - 699			200	175 - 533	12 - 21	342 - 497	100 - 447
379	380	381	382	383	768	69/	384	385	386	387	388	389	390	391		770	392	771	772	773	393			į	394	35	396	397
561568	<i>1</i> 81618	604891	498272	1041375	838184	839283	836064	496115	520300	520294	520298	531908	410114	1352204		553511	985880	902442	842223	823723	463568			00000	2077.78	843488	835026	545534
HNGJE50	HNGJO57	HNGJP69	HNGJT54	HNG0112	HNG0112	HNG0112	HNGOM56	HNHAHOI	HNHCX60	HNHCY64	HNHCY94	HNHDW38	HNHDW42	HINHED17		HNHED17	HNHEI42	HNHEI42	HNHEI42	HNHEI42	HINHFO29				HNHFU32	HNHOD46	ELDOHNH	HNTBL27
369	370	371	372	373			374	375	376	377	378	379	380	381			382				383			3	384	385	386	387

Ala-87 to Trp-92, Leu-105 to Ser-115.	Tyr-2 to Gly-15, Trn-192 to Asp-199,	Lys-248 to Leu-253,	to Lys-336,	o Val-364,	Val-383 to Ser-392.	Lys-81,	Gln-99 to Asp-109.	Тгр-76.		Pro-33,	Pro-93.	Pro-33,	Pro-93.		Pro-56,			,	Gly-96 to Cys-106.		Phe-57,	Arg-77,	Ser-87,	Pro-112 to Thr-117.) Phe-46,	Arg-66,	Tyr-70 to Ser-76, Pro-101 to Thr-106	Gln-7.	
Ala-87 to Trp-92, Leu-105 to Ser-11	1295 Tyr-2 to Gly-15, Tro-192 to Asp-1	Lys-248 t	Arg-330 (Gln-354 t	Val-383 t	1671 Arg-75 to Lys-81	Glu-99 to	1296 Lys-71 to Trp-76.	1672	1297 Trp-25 to Pro-33,	Gln-88 to Pro-93.	1673 Trp-25 to Pro-33,	Gln-88 to Pro-93	1298	1299 Thr 45 to Pro-56, Ser-66 to 1 vs-74	1300	200	┱	1302 Gly-96 to	1303	1304 Lys-50 to Phe-57,	Ser-70 to Arg-77,	Tyr-81 to Ser-87,	Pro-112 t	1674 Lys-39 to Phe-46,	Ser-59 to Arg-66,	Tyr-70 to Ser-76,	1305 [Leu-2 to Gln-7	200
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Asp-18 to Arg-31, Leu-38 to Gln-52.	Asp-18 to Arg-31, Leu-38 to Leu-53.	Lys-34 to Glu-39, Ile-47 to Ser-53, Pro-106 to I en-111	Pro-140 to Gly-146, Glu-195 to Gly-204,	Leu-281 to Thr-288,	Glu-291 to Arg-297, Tyr-302 to Ile-308.	Pro-34 to Ser-43, Glu-54 to Ser-60.	Arg-19 to Met-24,	His-64 to Pro-75,	Glu-82 to Leu-88.		Ser-74 to Ala-84,	Gln-156 to Tyr-161,	Tyr-184 to Asn-189,	Ser-218 to Ile-223,	Pro-299 to Ser-308,	His-359 to Thr-368,	Tyr-390 to Asp-404.	Leu-37 to Gly-44,	Thr-137 to Leu-144,	Ala-178 to Asn-184,	Asp-194 to Val-201,	Leu-252 to Glu-258,	Asp-280 to Tyr-293,	Asn-296 to Thr-301,	Asp-322 to Asp-348,
1306	1675	1307				1308	1309			1676	1310							1311							-
149 - 643	68 - 334	19 - 1020				104 - 784	248 - 601			387 - 449	256 - 1467							49 - 1503	. '						
409	27.8	410				411	412			622	413							414							
768325	509951	828177				634994	1036480			900015	748236							1184465							
НОЕВК34	ноевк34	HOEBZ89				НОЕDВ32	HOEDE28			HOEDE28	HOEDH84							ноғмозз							
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Asn-363 to Ser-368,	His-370 to Thr-378,	Asn-380 to Cys-386,	Glu-391 to Cys-399,	Leu 421 to Arg 426,	Glu-454 to Tyr-459.	\vdash	Pro-46 to Gly-51,	Thr-137 to Leu-144,	Ala-178 to Asn-184,	Asp-194 to Val-201,	Leu-252 to Glu-258,	Asp-280 to Tyr-293,	Asn-296 to Thr-301,	Asp-322 to Asp-348,	Asn-363 to Ser-368,	His-370 to Thr-378,	Asn-380 to Cys-386,	Glu-391 to Cys-399,	Leu-421 to Arg-426,	Glu-454 to Tyr-459.	Leu-37 to Gly-43.	,	Met-2 to Ser-9.	Thr-30 to Met-36,	His-121 to Thr-136,	Leu-231 to Gly-236,	Thr-248 to Pro-256,	Gly-342 to Thr-353.	Thr-30 to Met-36.		786 129 - 1232 1683 Thr-30 to Met-36,
						1677															1678	1679	1680	1312					1681	1682	1683
						48 - 1502															78 - 875	724 - 741	123 - 374	83 - 1315	,				83 - 427	1225 - 1500	129 - 1232
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						968616															906694	902639	702186	911180					905365	892308	892291
						HOFMQ33															HOFMQ33	HOFMQ33	HOFMQ33	HOFMT75					HOFMT75	HOFMT75	HOFMT75
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His-121 to Ser-56, His-121 to Thr-136, Leu-233 to Gly-243, Thr-250 to Ser-258, Thr-265 to Trp-270.			Asp-216 to Gly-224, Asp-268 to Asn-274, Thr-285 to Lys-290,	Asp-339 to Pro-345,	Are-370 to Pro-301,	Ala-408 to Tyr-417,	Pro-429 to Gln-434,	Arg-461 to Pro-466,	Ala-475 to Ala-482.	Ser-15 to Thr-31.	Thr-28 to Tyr-40,	Gln-61 to Ser-68,	Glu-74 to Lys-95,	Glu-163 to Thr-169,	Arg-197 to His-204,	Ser-210 to Phe-216,	Thr-272 to Asp-278,	Arg-286 to Gly-291,	Cys-310 to Ala-316.	Thr-28 to Tyr-40,	Gln-61 to Ser-68,	Glu-74 to Leu-94.	Thr-28 to Tyr-40,	Gln-61 to Ser-68.
	1313	1684	1314							1315	1316									1685			1686	
	79 - 297	155 - 373	167 - 2047							64 - 312	76 - 1167									81 - 419			81 - 419	
	416	787	417							418	419		·							788			789	
	1352378	899292	847424							847425	1186156									967554			878690	
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Thr-28 to Tyr-40, Gln-61 to Ser-68, Glu-74 to Lys-95, Thr-119 to Leu-124, Pro-126 to Gln-131.				Pro-25 to Arg-31,	Thr-52 to Val-63,	Asn-129 to Lys-135,	Gln-197 to Trp-202,	Thr-230 to Glu-236,	Pro-242 to Tyr-248,	Leu-280 to Pro-291,	Ser-348 to Ser-356,	Pro-362 to Gln-368,	Thr-398 to His-406,	Trp-430 to Leu-435,	Glu-499 to Gly-504.	Pro-24 to Arg-30,	Thr-51 to Val-62,	Asn-128 to Lys-134,	Gln-196 to Trp-201,	Thr-229 to Glu-235,	Pro-241 to Tyr-247,	Leu-279 to Pro-290,	Ser-347 to Ser-355,	Pro-361 to Gln-367,	Thr-397 to His-405,	Trp-429 to Leu-434,	Thr-60 to Ala-65.	11H -00 to 121H 00,
1687	1688	1689	1690	1317												1691											1318	2777
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905734	902326	885140	806819	745445												664499											895880	2000
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Leu-94 to Glu-99, Cys-182 to Trp-188.		Met-28 to Arg-34, Thr-154 to Arg-173, Gly-180 to Tyr-185,	Leu-226 to Asp-231, Leu-272 to Lys-277,	Thr-378 to Asn-383,	Asp 421 to Tyr 433,	Met-28 to Arg-34,	Thr-154 to Arg-173,	Gly-180 to Tyr-185,	Leu-226 to Asp-231,	Leu-272 to Lys-277,	Thr-378 to Asn-383,	Asp-421 to Arg-431.	Ala-1 to Ala-6.	Pro-17 to His-22,	Ser-29 to Ser-39.	Pro-37 to Asp-53.	Pro-33 to Phe-43,	Pro-48 to Lys-54,	His-61 to Val-66.		Met-1 to Phe-6,	Arg-44 to Arg-52,	His-64 to Cys-69,	Tyr-99 to Gln-147,	His-158 to Gly-169,	Phe-1// to Asp-182,
	1692	1319	-			1693				•			1694	1320		1321	1322		!	1323	1324					
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	902295	868616				907118							867965	833080		L	625973			547977	827481					
	HOGCK63	HOGCS52				HOGCS52							HOGCS52	HOHBB49		нонвс68	HOHBY12			HOHCC74	нонсн					
		412												413		414	415			416	417					

Cys-194 to Cys-202,	Gly-213 to Phe-218,	Pro-224 to Gly-236,	Asp-254 to Trp-261,	Asp-263 to Ala-303,	Trp-305 to Cys-316,	Lys-326 to Asp-332,	Pro-334 to Cys-343,	Pro-350 to Asp-370,	Thr 407 to Asn-413,	Gly-425 to Cys-431,	Asp-449 to Asp-459,	Gly 472 to Asn 483.	\vdash	Arg-44 to Arg-52,	His-64 to Cys-69,	Tyr-99 to Gln-147,	His-158 to Gly-169,	Phe-177 to Asp-182,	Cys-194 to Cys-202,	Gly-213 to Phe-218,	Pro-224 to Gly-236,	Asp-254 to Trp-261,	Asp-263 to Ala-303,	Trp-305 to Cys-316,	Lys-326 to Asp-332,	Pro-334 to Cys-343,	Pro-350 to Asp-370,	Thr-407 to Asn-413,	Gly-425 to Cys-431,	Asp-449 to Gly-460.	Gly-18 to Lys-23, Pro-31 to Gly-38.
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1696 Gly-18 to Lys-23, Pro-31 to Gly-38.	Ser-59 to Glu-67.		Asn-15 to Trp-20,	Ser-36 to Gly-41,	Pro-103 to Val-110,	Pro-134 to Arg-143,	Leu-173 to Arg-178,	Ser-190 to Ala-197,	His-314 to Arg-319,	Arg-354 to Asn-362,	Asp-391 to Arg-397,	Glu-402 to Asp-409,	Asp-434 to Leu-439,	Glu-441 to Arg-446,	Gly-455 to Asp-462,	Pro-528 to His-541,	Asn-566 to Arg-571,	Tyr-574 to Glu-581,	Thr-589 to Glu-603.	Gly-28 to Leu-42,	Met-52 to Leu-58.	Gly-8 to Leu-14,	Met-18 to Phe-30.	Ser-139 to Ser-144,	Phe-153 to Leu-159,	Gln-162 to Ser-170.	Ser-22 to Asn-27,	Val-29 to Trp-34,	Val-47 to Glu-53,	Thr-80 to Ser-90,	Thr-172 to Ser-179,
1696	1326	1327	1328																	1697	;	1329		1330			1331				
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Asn-222 to Ala-242,	Pro-247 to Ala-253,	Thr-269 to Cys-302,	Pro-304 to Pro-314.		Val-29 to Trp-34,	Val-47 to Glu-53,	Thr-80 to Ala-89,	Glu-91 to Gln-100.	Pro-33 to Gln-40,	Gly-51 to Arg-56.	\vdash	Asn-46 to Cys-51,	Glu-56 to Ser-62,	Asp-73 to Glu-79,	Phe-158 to Pro-168,	Glu-180 to Ile-185,	Asp-209 to Asn-214,	Phe-229 to Asn-234,	Asp-243 to Arg-249,	Asn-288 to Cys-301,	Arg-322 to Thr-330,	Cys-435 to Thr-440,	Gly 454 to Lys-462,	Ser-498 to Gln-507,	Ser-511 to Asp-525,	Leu-533 to Gly-541,	His-550 to Asn-560.	Gln-588 to Tyr-600.	 -	Glu-56 to Ser-62,	Asp-73 to Glu-79,	Phe-158 to Pro-168,
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Glu-180 to Ile-185, Asp-209 to Asn-214, Phe-229 to Asn-234, Asp-243 to Arg-249, Asn-288 to Asn-293, Lys-297 to Gln-302.	Asn-46 to Cys-51, Glu-56 to Ser-62.	Leu-20 to Ala-26, Arg-32 to Arg-39, Thr-104 to Gly-112.	Arg-29 to Pro-37, Gln-46 to Val-56.	Arg-29 to Pro-37, Gln-46 to Val-56.	Thr-35 to Gly-48.	Thr-35 to Gly-48.	Pro-14 to Asp-25, Leu-51 to Val-63.			Asp-40 to Glu-50, Ser-59 to Gly-69,	Leu-109 to Lys-117,	Tyr-130 to Leu-137,	Gly-202 to Tyr-208.	Asp-40 to Glu-50,	Ser-59 to Gly-69, Ala-98 to His-105,
	1701	1334	1335	1702	1336	1703	1337	1338	1339	1340				1704	
	124 - 342	86 - 445	51 - 446	510 - 905			21 - 260	283 - 426	20 - 208	128 - 763				127 - 648	
	804	437	438	805	439	806	440	441	442	443				807	
	801923	411080	1306899	422936	1094609	1047702	535710	542227	833082	1310868				590741	
	HPASA81	HPBCU51	HPDDC77	HPDDC77	HPDWP28	HPDWP28	HPFCL43	HPFDG48	HPIA068	HPIBO15				HPIBO15	
		427	428		429		430	431	432	433					

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Arg-108 to Glu-114, Pro-124 to Ser-138, Ala-143 to Gly-154.					Arg-50 to Leu-56.	Arg-50 to Leu-56.	Thr-43 to Asp-59,	Gly-88 to Gly-94, Lys-105 to Ile-115.	Leu-26 to Ser-33.	Gln-102 to Ser-108.		Gln-102 to Ser-108.		Ser-23 to Thr-32,	Ala-37 to Gln-44.										Asp-6 to His-13,	Asp-114 to Gly-131, Thr-166 to Gln-181,
	1341	1705	1706	1707	1342	1708	1709		1343	1344	1710	1711	1712	1713		1345	1346						1347	1348	1349	
	126 - 272	119 - 265	1001 - 696	509 - 523		136 - 378	232 - 666		44 - 217	23 - 544	31 - 375	170 - 694	84 - 767	918 - 595		483 - 662	37 - 171						119 - 265	82 - 195	94 - 1254	
	444	808	608	810	445	811			446	447	813	814	815	816		448	449						450	451	452	
	1011467	525375	796925	285669	1146674	1034817	1046434		696685	1352420	1184442	975252	894744	898220		635491	638165						798102	396804	829136	
	HPJBK12	HPJBK12	HPJBK12	HPJBK12	HPJCL22	HPJCL22	HPJCL22		HPJCW04	HPJEX20	HPJEX20	HPJEX20	HPJEX20	HPJEX20		HPMAI22	HPMFP40						HPMGJ45	HPQAC69	HPRBC80	
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Val-210 to Thr-216, Pro-222 to Tyr-227.								Pro-21 to Pro-26,	Arg-31 to Asn-37.	1717 Pro-21 to Pro-26,	Arg-31 to Asn-37.	Pro-21 to Pro-26,	Arg-31 to Lys-37.	Lys-32 to Lys-38.	Asn-49 to Gln-54,	Glu-150 to Asp-159.	Ala-30 to Gly-36,	Asp-45 to Trp-50,	Lys-65 to Cys-71,	Pro-80 to Cys-87.	Ala-30 to Gly-36,	Asp-45 to Trp-50,	Lys-65 to Cys-71,	Pro-80 to Cys-87.			Thr-29 to Ser-37,	His-89 to Gly-94, Asn-124 to Gln-130,
	1714	1350	1351	1352	1715	1716	1353	1354		1717		1718		1355	1356		1357				61/1				1358	1720	1359	
	404 - 613	127 - 306	80 - 214	468 - 626	474 - 632	178 - 435	88 - 321	149 - 310		149 - 313		161 - 301	•	34 - 177	35 - 514		144 - 452				130 - 438				252 - 410	252 - 413	196 - 1923	
	817	453	454	455	818	819	456	457		820		821		458	459.		460				822				461	823	462	
	720095	526310	526749	1001560	876469	789574	413270	722246		709662		692213		585702	658717		882176				588460				871221	706332	1309774	
	HPRBC80	HPRSB76	HPVAB94	HPWAY46	HPWAY46	HPWAY46	HPWAZ95	HPWDJ42		HPWDJ42		HPWDJ42		HPZAB47	HRAAB15		HRABA80				HRABA80				HRACD15	HRACD15	HRACD80	
		443	444	445			446	447						448	449		450								451		452	

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Ala-163 to Val-168, Cys-196 to Arg-201, Gin-244 to Gln-264, His-288 to Tyr-294, Leu-314 to Gln-319, Ala-392 to Ser-399, Pro-412 to Asp-419, Ala-452 to Pro-460, Arg-466 to Thr-473.	Lys-32 to Ser-37, His-89 to Gly-94, Asn-124 to Gln-130, Ala-163 to Val-168, Cys-196 to Arg-201, Gln-244 to Gln-264, His-288 to Tyr-294, Leu-314 to Gln-319, Ala-392 to Ser-399, Pro-412 to Asp-419, Ala-452 to Pro-460, Arg-466 to Thr-473.	Gly-31 to Thr-38, Arg-84 to His-89, Pro-122 to Pro-129.	Thr-29 to Pro-34.	Phe-48 to Cys-54.	Leu-40 to Arg-48, Thr-62 to Thr-67.		Thr-25 to Asp-38.
	1721	1722	1360	1362	1	1723	1365
	191 - 1915	191 - 631	146 - 976 82 - 333	244 - 420	322 - 570	327 - 473	140 - 289
	824	825	463 464	465	467	826	468
	882163	740762	637650	519326	772554	490870	490879
	HRACD80	HRACD80	HRDFD27	HRTAE58 HSATR82	HSAUK57	HSAUK57	HSAUL82
			453	455	457		458

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	Ser-58 to His-64.		Ile-46 to Tyr-56.			Tyr-24 to His-32,	Pro-38 to Ala-44,	Pro-66 to Glu-75,	His-111 to Gly-116,	Tyr-139 to Ser-146,	Thr-176 to Ser-181,	Lys-239 to Lys-249.	Val-29 to Val-37,	Asp-71 to His-76,	Gln-78 to Gly-84,	Met-105 to His-110,	Trp-117 to Asn-123,	Lys-179 to Pro-187,	Gly-218 to Asp-224,	Leu-237 to Ala-243,	Thr-256 to Asp-268,	Ser-275 to Lys-280,	Arg-308 to Glu-314,	Glu-326 to Glu-332,	Cys-343 to Asp-359.	Val-29 to Val-37,	Asp-71 to His-76,	Gln-78 to Gly-84,	Met-105 to His-110,	Trp-117 to Gly-122,
1366	1367	1368	1369	1370	1371	1372							1373													1724				
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459	460	461	462	463	464	465							466						_											

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Gin-136 to Lys-141, Leu-143 to Ala-149, Thr-162 to Asp-174, Ser-181 to Lys-186, Arg-214 to Glu-220, Glu-232 to Glu-238, Cys-249 to Asp-265.	Pro-42 to Lys-49, Lys-56 to Lys-71.	Phe-8 to Ser-13, Val-81 to Arg-87, Asp-98 to Pro-104.	Phe-8 to Ser-13, Ala-84 to Ser-90.	1376 Thr-32 to Lys-40, Lys-146 to Glu-152.	Glu-33 to Glu-56, Thr-75 to Cys-81.	Glu-33 to Glu-56, Thr-75 to Cys-81.	1378 Tyr-15 to Leu-59, Ala-68 to Asp-85, Pro-87 to Asn-96, His-120 to Lys-129, Ser-153 to Gln-170.	Leu-3 to Asn-9. Leu-23 to Met-30.	Ser-95 to Glu-102, Ala-110 to Tyr-115, Gln-176 to Ile-184, Gln-192 to Asp-203, Ala-210 to Ile-220,
	1374	1375	1725	1376	1377	1726	1378	1379	
	72 - 287	58 - 423	66 - 359	247 - 705	16 - 423	22 - 387	160 - 705	44 - 73	484 431 - 1201
	477	478	828	479	480	829	481	482	484
	664502	1352287	704101	795252	1301498	463645	545057	552789	1352191
	HSDER95	HSDEZ20	HSDEZ20	HSDJA15	HSDSB09	HSDSB09	HSDSE75	HSFAM31 HSHAX21	HSIAS17
	467	468		469	470		471	472	474

Lvs-229 to Are-240.	Leu-242 to Val-251.	Met-99 to Ala-114.	Pro-53 to Glu-59.	Pro-53 to Glu-59.	Gly-31 to Arg-36,	Thr-55 to Glu-62,	Ser-64 to Ser-79,	Arg-87 to Asp-96,	Arg-103 to Ala-109,	Asp-120 to Arg-126,	Gly-294 to Gly-302,	Ser-305 to Ala-318,	Val-320 to Arg-327,	Pro-344 to Thr-351,	Thr-383 to Thr-399,	Leu-414 to Lys-435,	Thr 449 to Ala 457,	Gly-461 to Asn-479,	Gly-483 to Gln-498,	Ser-503 to Arg-514,	Lys-532 to Ala-559,	Leu-563 to Ser-611,	Lys-632 to Tyr-638,	Asn-667 to Lys-672,	Leu-701 to Met-707,	Ser-745 to Lys-755,	Lys-761 to Leu-768,	Pro-787 to Trp-792,	Lys-871 to Met-883,	Pro-914 to Tyr-923,	Ser-925 to Arg-939,	Glu-942 to Tyr-950.
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Gly-31 to Arg-36, Thr-55 to Glu-62, Ser-64 to Ser-79, Arg-87 to Asp-96, Arg-103 to Ala-109, Asp-120 to Arg-126, Gly-294 to Gly-302, Ser-305 to Ala-318, Val-320 to Arg-327, Pro-342 to Thr-351.	Thr-383 to Thr-399, Leu-414 to Lys-435, Thr-449 to Ala-457, Gly-461 to Asn-479, Gly-483 to Gln-498, Asn-504 to Val-509.	Gly-27 to Arg-32, Thr-51 to Glu-58, Ser-60 to Ser-75, Arg-83 to Asp-92, Arg-99 to Ala-105, Asp-116 to Arg-122, Gly-290 to Ala-314, Val-316 to Arg-345, Pro-338 to Arg-345, Pro-338 to His-375, Arg-403 to Ser-408, Ser-420 to Ser-436, Thr-447 to Ala-455, Gly-459 to Asn-477, Gly-481 to Gln-496, Ser-501 to Arg-512, Lys-530 to Lys-554.
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1384 Gly-76 to Leu-83, Ala-108 to Glu-113, Ala-126 to Lys-132, Gly-145 to Leu-151, Gln-161 to Val-166, Ala-180 to Gln-185, Gly-190 to Ala-198, Asn-203 to Gly-216.	Gly-76 to Leu-83, Ala-108 to Glu-113, Ala-126 to Lys-132, Gly-145 to Leu-151.				-			Thr-24 to Leu-33.	Thr-24 to Leu-33.	Arg-54 to Leu-60, Ala-73 to Gly-78.	Pro-22 to Lys-29.				Pro-7 to Cys-12, Lys-48 to Tyr-62.	Arg-182 to His-187,	Leu-189 to Glu-196,	Thr-211 to Gly-226, Leu-270 to Thr-275.
	1731	1385	1732	1386	1733	1734	1387	1388	1735	1389	1390	1391	1392	1393	1394			
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487	834	488	835	489	836	837	490	491	838	492	493	494	495	496	497			
1307105	552233	1352226	589526	1016920	852244	895206	542649	906081	906498	793744	638591	630636	566879	589978	1352343			
HSKHZ81 1307105 487	HSKHZ81	HSLCQ82	HSLCQ82	HSLJG37	HSLJG37	HSLJG37	HSNAB12	HSODE04	HSODE04	HSPBF70	HSQCM10	HSSAJ29	HSSDX51	HSSFT08	HSSGD52			
477		478		419			480	481		482	483	484	485	486	487			

Gly-278 to Gly-289, Pro-444 to Asn-449, Glu-453 to Lys-461, Gly-491 to Thr-496, Ser-525 to Trp-532.	Pro-7 to Cys-12, Lys-48 to Tyr-62, Arg-182 to His-187, Leu-189 to Glu-196, Thr-211 to Gly-226, Leu-270 to Thr-275, Gly-278 to Gly-289, Pro-444 to Asn-449, Glu-453 to Lys-461, Gly-491 to Thr-496, Ser-525 to Trp-532.	Pro-40 to Arg-50, Ser-72 to Arg-77, His-82 to Leu-91, Gln-171 to Glu-189, Val-203 to Gly-222, Pro-263 to Thr-269, Ser-282 to Trp-287.	Pro-40 to Arg-50, Ser-72 to Arg-77, His-82 to Leu-91, Gln-171 to Glu-189, Val-203 to Gly-222, Pro-263 to Thr-269, Ser-282 to Trp-287.	Arg-32 to Leu-37. Pro-38 to Gly-44, Phe-56 to Thr-64.
	1736	1395	1737	1738
	338 - 2155	62 - 949	55 - 939	66 - 176 120 - 371
	839	498	840	841 499
	845666	1306937	745409	716424 753250
	HSSGD52	HSSJC35	HSSJC35	HSSJC35 HSTBJ86
		488		489

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		116860, 129900, 233700, 600079				602088															181430, 217300, 600698, 600698, 600698, 600698, 600698, 600808, 602116							
		116860,				278700, 602088								•							181430 600808							
		7q11.23				9q22.31	14														12q15-q21	2						
Asp-23 to Gly-29.		Asp-26 to Asn-31,	Ser-37 to His-49,	Ma-US to Oct - US.	Phe-84 to Asn-90.		Ser-23 to Trp-30.	Ser-23 to Trp-30.		Cys-28 to Pro-33,	Arg-41 to Pro-52,	Glu-118 to Glu-127,	Tyr-130 to Arg-135,	Ser-224 to Arg-230,	Ser-322 to His-329,	Glu-388 to Ala-396,	Pro-404 to Pro-411,	Ser-443 to Thr-454,	Val-456 to Arg-462,	Asn-500 to Arg-507.				Arg-1 to Asn-9,	Pro-24 to Ile-32,	Val-95 to Cys-106.	Glu-1 to Glu-8,	Pro-38 to Gly-45, I en-53 to Glv-60.
1397	1398	1399		1400	1739	1401	1402	1740	1741	1403											1404	1405	1742	1743			1744	
153 - 323	46 - 201	256 - 528		101 - 901	211 - 729	295 - 432	123 - 305	136 - 318	1271 - 1324	506 155 - 2173											186 - 395	131 - 301	345 - 515	723 - 1040			2 - 838	
500	501	1		503	842				844	909											507	208	845	846			847	
413246	520328	898965		044388	830673	634032	1016924	889664	895602	847358											686437	1027673	852318	902235			882732	
HSUBW09	HSVAM10	HSVBU91		HSYCG83	HSXCG83	HSXEC75	HSXEQ06	HSXEQ06	HSXEQ06	HSYAV50											HSYAV66	HSYAZ50	HSYAZ50	HSYAZ50			HSYAZ50	
490	491	492		403		494	495			496										_	497	498						

	103850, 114835, 121360, 217800, 218030		141750, 141800, 141800, 141800, 141850, 141850, 141850, 141850, 141850, 141850, 156850, 186580, 191092, 600140, 600273, 601313, 601785	225500, 600593, 602363
	16q22		16p13.3	4p16-p15
Glu-112 to Arg-117, Lys-153 to Lys-163, Trp-245 to Ala-251, Phe-259 to Gly-273.	Gin-14 to Tirr-21, Arg-26 to Pro-31, Leu-43 to Pro-50, Leu-81 to Asp-88, Pro-153 to Thr-158, Leu-211 to Thr-222, Asp-228 to Asn-233, Pro-273 to Glu-282.	Ser-22 to His-32.	Ser 47 to Pro-57, Ser 77 to Glu-82, Thr-90 to Trp-98, Arg-124 to Lys-137, Ala-183 to Glu-192, Lys-220 to Gln-229, Asn-244 to Arg-258, Thr-271 to Asn-278, Glu-285 to Gly-297. Ser 77 to Glu-82, Thr-90 to Trp-98, Arg-124 to Lys-137, Ala-183 to Glu-192, Lys-220 to Gln-229, Asn-244 to Arg-258, Thr-271 to Asn-278, Glu-285 to Gly-297.	Gly-16 to Pro-30, Pro-42 to Gly-56,
	1406	1745	1746	1408
	448 - 1749	215 - 337	48 - 965	106 - 972
	509	848	849	511
	1177537	862063	581098	1352172
	HSYAZ63	HSYAZ63	HSYBG37	HSZAF47
	499		500	501

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		20q13.1	7q11.23		1923.1
Gly-62 to Gly-77, Glu-93 to Gly-104, Glu-109 to Glu-114, Pro-121 to Gly-134, Ser-157 to Arg-162, Glu-174 to Thr-182, Ile-283 to Leu-289.	Gly-16 to Pro-30, Pro-42 to Gly-56, Gly-62 to Gly-77, Glu-93 to Gly-104, Glu-109 to Glu-114, Pro-121 to Asp-126.	Leu-44 to Thr-55.	Ser-29 to Thr-57, Pro-74 to Lys-79, Pro-85 to Glu-107, Tyr-118 to Tyr-136, Gln-144 to Gln-152, Ala-182 to Asn-195, Arg-203 to Val-208, Leu-212 to Ser-217,	Ser-29 to Thr-57, Pro-74 to Lys-79, Pro-85 to Glu-107, Tyr-118 to Tyr-136, Gln-144 to Gln-152, Ala-182 to Glu-188.	Glu-15 to Arg-23, Asn-79 to Gly-84, Ser-101 to Gly-106, Ser-111 to Asn-116.
	1747	1409	1410	1748	1411
	107 - 490	184 - 390	105 - 836	122 - 694	92 - 520
	850	512	513	851	514
	456551	884170	1299921	740767	753289
	HSZAF47	HT3SF53	HT5GJ57	HTSGJ57	HTADX17
		502	503		504

	0, 272800, 272800,										<u></u>							•			// · · · · · · · · · · · · · · · · · ·	12, 601002, 601146,	
	15q33.33-q23 118485, 151670, 231680, 272800, 272800, 272800, 272800, 276700, 600374, 601780																136550, 602772					139190, 139190, 224100, 601002, 601002, 601146, 601146, 601146	
	15q33.33-q23																6q16.1					20q11.2	
1749 Glu-15 to Arg-23, Asn-79 to Gly-84.	Pro-22 to Glu-33.	Phe-30 to Lys-37, Pro-43 to Lys-75.	Arg-24 to Arg-41, Pro-56 to Trp-64.	Pro-68 to Asp-73, Gln-92 to Glu-107, Gln-120 to Lys-126	Glu-43 to Asn-49.	Cys-75 to Lys-88,	Glu-120 to Asp-125,	Pro-182 to Ser-188, Pro-210 to Gln-216.	Glu-43 to Asn-49.	Gly-35 to Gly-40.	Asp-61 to Gln-68,	CI)-100 to E)3-100:			Pro-1 to Arg-15.		Met-1 to Thr-6,	Gly-45 to Asn-61,	Ala-63 to Asn-72.	Met-1 to Thr-6,	GIY-45 to Asn-/4.	1420 Leu-67 to Glu-73, Arg-83 to Gln-92,	Leu-124 to Tyr-134,
1749	1412	1413	1414	1415	1416				1750	1417	1418		1751	1752	1753	1754	1419			1755		1420	
84 - 512	38 - 301	135 - 362	43 - 246	696 - 1076	19-717				19 - 252	231 - 371	26 - 799		145 - 915	1 - 282	856 1081 - 1326	670 - 849	84 - 572			41 - 415		121 - 1059	
852	515	516	517	518	519)			853	520	521		854	855	856	857	522			828		523	
457172	396835	866485	462221	587326	1352193				519372	543396	908143		904624	850770	847564	830165	835894			513039		600394	
HTADX17	HTDAF28	HTEAF65	HTEB128	HTEDF80	HTEDY42				HTEDY42	HTEFU65	HTEGI42		HTEGI42	HTEGI42	HTEGI42	HTEGI42	HTEHR24			HTEHR24		HTEHU31	
	205	206	507	208	500	}				510	511						512					513	

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						600234, 602094																146200, 190300, 258900, 600882							
	20pter-q11.23					1p12													•			3q13				I		18	
Gln-146 to Thr-157.	Arg-21 to Thr-29, Tyr-56 to Lys-63,	Ser-93 to Ser-100, Chi-109 to I ye-116	Arg-21 to Thr-29.	Glu-33 to Arg-45.		Tyr-37 to Cys-49,	Gly-51 to Tyr-56,	Lys-88 to Trp-93,	Phe-125 to Lys-140,	Lys-147 to Thr-153,	Thr-175 to Asn-188,	Ala-203 to Met-208.	Tyr-37 to Cys-49,	Gly-51 to Tyr-56,	Lys-88 to Trp-93,	Leu-130 to Glu-136.		Ser-38 to Tyr-48,	Gly-67 to Trp-74,	Tyr-76 to Pro-84.	Arg-71 to Ala-82.	Glu-35 to Asp-53,	Met-82 to Gln-107,	Vai-11/10 019-123.					
	1421		1756	1422	1423	1424							1757		,		1758	1425			1426	1427		9	1428	1429	65/1	1430	1760
	188 - 616		187 - 528	22 - 198	203 - 346	156 - 779							163 - 639				155 - 367	121 - 375			365 - 634	149 - 577		,	285 - 569	47 - 166	149 - 268	231 - 347	224 - 340
	524		859	525	526	527							98				861	528			529	530			531	532	862		863
	722254		423009	520468	584798	1352272							658744			-	381941	834058	···		834931	597467			410582	919911	906282	908144	906536
	нтен093		HTEHI93	HTEIP36	HTEIV80	HTEIN13							HTEJN13				HTEJN13	HTELM16			HTEPG70	HTGAU75			HTGEP89	HTHBG43	HTHBG43	HTHCA18	HTHCA18
	514			515	516	517					_							518			519	520			521	522		523	

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1p36.13-q41 115665, 120550, 120570, 120575, 130500, 133200, 107410, 172430, 600975		231680, 276700													•										
3-941		15q25	13		•																				
1p36.1		150	11,	•																					
Arg-31 to Gln-37, Val-88 to Gly-95, Pro-110 to Gln-120, Gln-151 to Ala-163, Asp-231 to Trp-237, Pro-277 to Lys-287.		Gly-85 to Lys-94, Gln-125 to Cys-131, Glu-151 to Gly-159.	Gly-10 to Gly-17,	Pro-49 to Glu-54,	Gln-97 to Asp-103,	Ser-120 to Tyr-125,	Gln-186 to Leu-199,	Glu-202 to Tyr-213,	Ser-225 to Cys-233,	Thr-269 to Ser-284,	Gly-308 to Val-328,	Asp-350 to Ala-357,	Arg-367 to Gln-372,	Arg-429 to Thr-434,	Gly-444 to Thr-449,	Thr-466 to Val-481,	Val-485 to Ser-499,	Ser-534 to Arg-540,	Met-564 to Ile-570,	Asn-573 to Phe-589,	Pro-603 to Val-611,	Arg-706 to Gly-711,	Glu-717 to Asp-725,	Ser-732 to Ser-738,	Gln-743 to Glu-749,
1431	1432	1433	1434																						
66 - 944	70 - 339	527 - 1069	30 - 2495															•	,						
534	535	536	537																						
693652	772559	706618	1040047																						
HTHD194	HTHDS25	HTJMA95	HTJML75																						
524	525	526	527																						

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			٠-٠			18q23							9q34.12	19p13.3								3			20q13.33				
Leu-799 to Asp-805.	Gly-49 to His-56.	Gly-35 to Cys-41.		Ser-22 to Thr-32,	FTO-3 / 10 Ser-42.	Asp-32 to Glu-37,	Ala-41 to Phe-46,	His-171 to Ala-176.	Ala-23 to His-34,	His-153 to Ala-158.	Ala-23 to His-34,	His-153 to Ala-158.	Val-31 to Gly-49.	His-22 to Tyr-32,	Trp-56 to Lys-62,	Ile-72 to Leu-77,	Ile-126 to Gly-136,	Tyr-187 to Ala-193,	10-200 till-211:	Ser-83 to Tyr-88,	Ala-129 to Ser-134, Ser-227 to Ala-233.			Asp-27 to Ser-36.	Gln-27 to Arg-36.		Pro-35 to Ser-40.		Gly-33 to Arg-40, Ser-106 to Met-112,
	1761	1435	1762	1436		1437		<u> </u>	1763		1764		1438	1439					1	1440		1441	1442	1443	1444	1445	1446	1765	1447
	335 - 529	129 - 266	205 - 222	116 - 349	_	124 - 687			189 - 688		110 - 619		51-311	36 - 776						288 - 1028		110 - 364	7 - 129	87 - 419	43 - 222	183 - 257	14 - 181	13 - 195	155 - 727
	₩-	538	├	-		240			998		298		541	542						543		544	545	546	547	548	549	898	250
	873355	902187	885431	460583		1352310	_		791409		608317		1035130	838460				_		833906		1046341	519313	560744	526021	532001	838160	570751	604983
	HTJML75	HTLBE23	HTLBE23	HTLFE42		HTLFE57			HTLFE57		HTLFE57		HTLGE31	HTCHY14						HTLIT32		HTLIV19	HTNB091	HTOAK16	HTODK73	HTODO72	HTOGR42	HTOGR42	HTOHD42
		528		529		530							531	532		_				533		534	535	536	537	538	539		540

WO 02/102994 PCT/US02/08278

						17							11				•													
Ala-154 to Gly-163.			Arg-1 to Gly-7, Phe-11 to Arg-23.		Leu-39 to Ser-47.	Arg-20 to Val-29.	Gly-1 to Glu-11,	His-16 to Pro-24,	Gly-31 to Arg-37,	Asp-43 to Leu-49.			Leu-21 to Ala-30,	Ser-38 to Asp-47,	Pro-87 to Asp-94,	Leu-197 to Thr-204,	Pro-256 to Ser-262,	Thr-277 to Arg-282,	Thr-293 to Val-302,	Lys-315 to Arg-321.	Leu-21 to Ala-30,	Ser-38 to Asp-47,	Pro-87 to Asp-94,	Leu-197 to Thr-204,	Pro-256 to Ser-262,	Thr-277 to Arg-282,	Thr-293 to Trp-303.	Leu-21 to Ala-30,	Ser-38 to Asp-47,	Pro-87 to Asp-94,
	1448	1766	1921	1768	1449	1450	1769				1451	1452	1453								1770							1771		
	30 - 215	23 - 208	71 - 1036	1555 - 1596	433 - 594	243 - 395	2 - 721				100 - 225	217 - 315	178 - 1263								302 - 1390							92 - 1336		
	551		870	871	552	553	872				554	_	929								873							874		
			848200	848196	628300	826312	847904				797108	545067	1317835								581435							396459		
	HTOHM15	HTOHMIS	HTOHM15	HTOHIM15	HTOHT18	HTOIZ02	HTOIZ02				HTOJA73	HTOJK60	HTPBW79								HTPBW79							HTPBW79		
	541				542	543			_		54	545	546																	

WO 02/102994 PCT/US02/08278

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									14q11.2-q12		2p21	11p13			1p36.13-q41
Leu-197 to Arg-202, Pro-287 to Ser-293, Thr-308 to Arg-313, Thr-324 to Trp-334.		Glu-55 to Arg-61, Gln-84 to Ser-92, Ser-99 to Ser-104.	Tyr-67 to Pro-74, Ser-117 to Gln-123,	Pro-161 to Met-185, Gly-224 to His-242,	Thr-299 to Trp-307.	Tyr-67 to Pro-74,	Ser-117 to Gln-123, Pro-161 to Met-185.	Thr-54 to Ile-59.					Gln-29 to Gly-38, Lys-57 to Asp-62.	Gln-29 to Gly-38, Lys-57 to Asp-62.	Glu-24 to Tyr-35, Arg-83 to Thr-92, Pro-148 to Gly-154.
	1454	1455	1456			1772		1457	1458		1459	1460	1461	1773	1462
	170 - 283	133 - 534	55 - 1011			153 - 1535		334 - 639	316 - 570		376 - 528	185 - 319	175 - 480	183 - 458	217 - 822
	557	558	529			875		560	561		562	563	564	876	565
	460579	637725	812763			909573		429618	714344		699794	634083	1352213	900/95	695765
	HTSEW17	HTTBI76	HTTDB46			HTTDB46		HTWCT03	HTWDF76		HTWJK32	HTWKE60	HTXCV12	HTXCV12	HTXDW56
	547	548	549					550	551		552	553	554		555

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3	1p34	20q11.23		•																	******								
1463 Met-1 to Gly-6, Arg-11 to Gly-21.		Pro-24 to Pro-37.	Pro-24 to Pro-37.	Ser-44 to Leu-51,	Arg-81 to Cys-94,	Thr-132 to Tyr-140,	Arg-143 to Ile-154.	Ser-44 to Leu-51,	Arg-81 to Cys-94,	Thr-118 to Tyr-126,	Arg-129 to Ile-140.			Trp-35 to Trp-45,	Pro-52 to Asp-57,	Thr-73 to Arg-82,	Pro-105 to Leu-112,	Pro-115 to Arg-127,	Pro-140 to Gln-151.	Trp-35 to Trp-45,	Pro-52 to Asp-57,	Thr-73 to Thr-80,	Pro-96 to Leu-103,	Pro-106 to Arg-118,	Pro-131 to Gln-142.	Trp-35 to Trp-45,	Pro-52 to Asp-57,	Thr-73 to Thr-80,	Pro-96 to Leu-103,
1463	1464	1465	1774	1466				1775				1467	1776	1468						1777						1778			
30 - 338	169 - 297	1085 - 1303	197 - 361	49 - 525	,		•	74 - 508	•			190 - 393	182 - 388	286 - 738			-			144 - 572						55 - 414			
999	267	568		569				878				570	879	571	·					880						881			
620001	824083	1352211	562791	1352349	_			846380				645101	630097	1352424						1300737						603538			
HTXFL30	HTXKP61	HUDBZ89	HUDBZ89	HUFBY15				HUFBY15				HUFEF62	HUFEF62	HIKAHSI						HUKAHSI						HUKAH51			
556	557	558		559								560		561	3														

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П	1942		9q34																	4q21.1										
Pro-106 to Leu-119.	Thr-35 to Lys-43, Pro-59 to Arg-64.		Glu-32 to Arg-38, Gln-56 to Asn-64,	Ser-69 to His-83,	Arg-87 to Gln-118,	Leu-137 to Thr-146,	Pro-148 to Gly-157,	Trp-177 to Ala-184,	Asp-188 to Ser-194,	Lys-221 to Arg-227,	Arg-283 to Pro-289,	Pro-302 to Asp-308,	Thr-328 to Phe-333,	Ser-348 to Gly-353,	Gly-392 to Leu-400,	Arg-416 to Lys-422,	Tyr-493 to Glu-502,	Thr-527 to Trp-535,	Asn-559 to Met-572.	Pro-51 to Arg-56,	Lys-89 to Gln-94,	Glu-144 to Gln-151,	Gln-178 to Gln-183,	Leu-224 to Gln-229,	Tyr-284 to Pro-298,	Lys-324 to Lys-334.	Gly-39 to Thr-44,	Asn-51 to Thr-62,	Pro-88 to Pro-104,	Ser-109 to Phe-124,
	1469	1470	1471																	1472							1473			
	74 - 1594	302 - 439	270 - 2117											-						9-1010							280 - 1845			
	572	573																		575							576	_		
	694590	6065909	895435																	566762							1352367			
	HUKBT29	HUSAT94	HUSBA88															_		HUSIG64							HUSXS50			
	295	563	564																	565							999			

				6 1p36.31-p36.11120550, 120570, 120575, 130500, 133200, 600975	
Ala-190 to Asn-196, Gln-388 to Glu-394, Gln-402 to Gly-409, Asn-427 to Leu-439, Glu-447 to Thr-453, Pro-468 to Gln-474, Pro-476 to Phe-482, Arg-498 to Arg-504, Arg-508 to Arg-518.	Gly-39 to Thr-44, Asn-51 to Thr-62, Pro-88 to Pro-104, Ser-109 to Ser-114.	Gln-54 to Gly-61, Asn-79 to Leu-91, Glu-99 to Thr-105, Pro-120 to Gln-126, Pro-128 to Phe-134, Arg-150 to Arg-156, Arg-160 to Arg-170.	Pro-53 to Trp-61.	Pro-30 to Asn-36. Pro-67 to Ser-73.	Ile-40 to Glu-45, Cys-63 to Val-69, Glu-83 to Asn-94, Pro-107 to Cys-115, Phe-137 to Ser-143, Ser-159 to Thr-167,
	1779		1474 1781 1782	1475 1476 1477	1478
	281 - 1666	179 - 703	322 - 825 322 - 483 312 - 818	57 - 203 263 - 766 581 - 709	52 - 687
	882	883	884 885	578 579 580	581
	883176	655372	838626 833089 793875		
	HUSXS50	HUSXS50	HWAAD63 HWAAD63 HWAAD63	HWABA81 HWABY10 HWADI89	HWBAO62
			567	568 569 570	571

						600320	107300, 131210, 136132, 145001, 145260, 173610,	276901, 600332, 600/59, 601518, 601652, 601744,	601975												602629							
						6q24.3	1q24-q41														8p21.3					···		
Glu-200 to Tyr-210.	De-40 to Glu-45, Cys-63 to Val-69, Glu-83 to Phe-95			Leu-2 to Leu-10.	Phe-13 to Ser-19, Ser-96 to Pro-104.		Gln-20 to Phe-25,	Gly-58 to Ala-66,	Gln-69 to Leu-74,	Asn-87 to Ile-100,	Thr-135 to Trp-142.	Gln-20 to Phe-25,	Gly-58 to Ala-66,	Gln-69 to Leu-74,	Asn-87 to Ile-100,	Thr-135 to Trp-142.	Trp-47 to Thr-54,	Ser-68 to Asn-73,	Ser-86 to Gly-92.	Trp-47 to Thr-54.	Ser-25 to Phe-31.	Ser-25 to Phe-31,	Lys-55 to Arg-61.	-	Met-196 to Asp-204,	Lys-212 to Leu-218,	Pro-277 to Leu-285,	Pro-290 to Arg-298,
	1783	1479	1784	1785	1786	1480	1481				,	1787	_				1482			1788	1483	1789		1484				
	81 - 386	152 - 1264	287 - 430	204 - 242	492 - 878	156 - 383	37 - 600					35 - 598					243 - 560			233 - 550	1342 - 1542	132 - 314		75 - 5738				
	988	582	887	888	688	583	584					890					585			891	-	┰		587				
	625914	1107118	845408	873239	762339	836469	1093347					886210					846382			646977	1352265	638536		949402				
	HWBAO62	HWBAR14	HWBAR14	HWBAR14	HWBAR14	HWBAR88	HWBCB89	_		-		HWBCB89					HWBCP79			HWBCP79	HWBDP28	HWBDP28		HWBEM18				
		572				573	574										575				576			577				

Ser-402 to Ser-407, Trp-465 to Gly-470, His-698 to His-706, Asp-793 to Asn-801, Gln-830 to Lys-838, Gly-862 to His-867, Ala-871 to His-877, Lys-1063 to Asn- 1069, Ser-1100 to Ser-1108, Asn-1194 to Ser- 11200, Leu-1308 to Gly- 1314, Lys-1437 to Asn- 1442, Asp-1583 to Val- 1599, Thr-1651 to Lys- 1656, Lys-1735 to Gly- 1740, Arg-1789 to Tyr- 1795, Arg-1869 to Pro-1875.	1790	1791	1485 Phe-8 to Pro-15,	Thr-79 to Arg-86, Arg-129 to Leu-142,
	65 - 2725	1 - 1494	227 - 1132	
	┢	8777573 8	 	
	HWBEM18	HWBEM18	578 HWBFE57	

																										134790, 152780, 152780, 600040	
																				-						19q13.32	
Gln-201 to Gly-208, Ser-249 to Gln-254.			Pro-34 to Tyr-43, Gln-73 to Trp-88,	Pro-98 to Thr-103.	Pro-34 to Tyr-43, Gln-73 to Cys-86,	r10-90 to Leu-103.		177 - 67 4- 17-1 60	His-56 to Val-62, Gly-105 to His-113,	Cys-141 to Trp-147,	His-149 to Arg-155,	Glu-159 to Pro-172.	Pro-49 to Ser-54,	Thr-68 to Thr-77.	Pro-26 to Asn-35.	Thr-59 to Gly-70,	Tyr-132 to Glu-150.	Phe-25 to Tyr-30,	Gln-37 to Arg-42,	Lys-106 to Leu-112,	Leu-123 to Leu-130,	Gin-142 to Phe-150,	Gln-183 to Lys-188,	Asp-219 to Glu-226,	Lys-359 to Glu-366.	Lys-39 to Cys-44, Pro-87 to Glv-93	1110-01 10 017
	1792	1793	1486		1794	1487	1705		1488				1796		1489	1797		1490								1491	
	3300 - 3413	622 - 672	96 - 428		85 - 438	755 277	310 - 441	100.	389 - 1021				394 - 627		511 - 780	306 - 758		145 - 1389								33 - 1073	
	895 3	968	589		897	605	808		591				668		592	900		593								594	
	290706	876136	1310817		634781	1020510	980781	107500	995431				839250		1352257	636080		695695			٠					886212	
	HWBFE57	HWBFE57	HWDAC39		HWDAC39	THY A CLOS	HWDALI36	пмилипо	HWHGP71				HWHGP71		HWHGO49	HWHG049	,	HWHGU54								HWHGZ51	
			579			6	200		581						582			583								584	

			Val-35 to Lys-41, Ser-68 to Gln-73, Glu-88 to Glu-93, Arg-156 to Gly-163, Ala-199 to Gly-206, Asp-216 to Ser-226, Thr-249 to Asn-254, Asp-339 to Pro-345, Ile-370 to Gly-379, Pro-429 to Glu-434, Arg-461 to Pro-466, Ala-475 to Thr-482, Pro-585 to Gly-593,
	131 - 694	209 - 517	596 169 - 2397 1493
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Glu-631 to Gln-639,	Pro-674 to Pro-682,	Gln-715 to Gly-720,	341-730 (0 128-772:				His-7 to Gly-15,	Pro-89 to Arg-95, Pro-103 to His-109.		Gly-31 to Thr-51.		Pro-34 to Trp-41.	Leu-3 to Arg-8,	Asp-57 to Arg-64,	Glu-66 to Thr-75,	Arg-120 to Ile-126,	Gln-161 to Asp-177,	Thr-182 to Ser-194,	Lys-211 to Gln-216,	Asn-274 to Gly-290,	Thr-296 to Phe-302.	Leu-3 to Arg-8,	Asp-57 to Arg-64,	Glu-66 to Thr-75,	Arg-120 to Ile-126,	Gln-161 to Asp-177,	Thr-182 to Ser-194,	Lys-211 to Gln-216,	Asn-274 to Gly-290,	Thr-296 to Phe-302.
			1494	1424	1800	1801	1802		1495	1496	1497	1498	1499									1803						_		
		-	30 176	39 - 170	29 - 166	3-410	1 - 423		129 - 626	190 - 378	157 - 297	601 319 - 444	468 - 1400									906 468 - 1400								
			202	7	903	904	905		598	599	009	109	602									906								
			0020001	103201	873296	881710	846351		793713	826754	610383	834784	846517									887467								
			CCI VI HAMA	HWLEV32	HWLEV32	HWLEV32	HWLEV32		HWI IH65	HYAAJ71	HYBAR01	HYBBE75	HAPSA79									HAPSA79								
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HAPSA79	878627	907	468 - 1400	1804	1APSA79 878627 907 468 - 1400 1804 Leu-3 to Arg-8,	
					Asp-57 to Arg-64,	
					Glu-66 to Thr-75,	
					Arg-120 to Ile-126,	
				_	Gln-161 to Asp-177,	
					Thr-182 to Ser-194,	
					Lys-211 to Gln-216,	
					Asn-274 to Gly-290,	
					Thr-296 to Phe-302.	

Table 1B.2	B.2			
Gene No:	cDNA Clone	Contig SEQ ID ID: NO:X	SEQ ID	Tissue Distribution Library Code: Count (see Table 4 for Library Codes)
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2	H2MAC30	544957	12	S0308:1, S0434:1, L0596:1, S0026:1, H0136:1, H0542:1 and S0458:1. AR096:11, AR039:10, AR313:10, AR299:10, AR250:9, AR240:8, AR254:8, AR055:8, AR242:8, AR060:7, AR096:11, AR039:10, AR313:10, AR299:10, AR213:6, AR269:6, AR252:5, AR268:5, AR169:5, AR169:5, AR169:5, AR169:5, AR169:5, AR169:5, AR169:5, AR169:5, AR169:5, AR200:5, AR204:5, AR216:5, AR166:5, AR163:4, AR277:4, AR300:4, AR229:4, AR183:4, AR200:5, AR206:5, AR178:4, AR247:4, AR266:5, AR178:4, AR247:4, AR190:4, AR247:4, AR247:4, AR247:4, AR247:4, AR218:4, AR218:4, AR247:3, AR247:3, AR247:3, AR247:3, AR247:3, AR247:3, AR247:3, AR190:4, AR247:3, AR247:3, AR190:3, AR290:3,
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				AR313:4, AR316:4, AR282:4, AR240:4, AR089:4, AR299:3, AR219:3 H0257:17, H0256:2, H0559:1, H0123:1 and S0276:1.
	H6EAB28	589947	603	
4	H6EDF66	520498	14	AR176:12, AR161:12, AR162:12, AR163:12, AR266:11, AR238:10, AR165:10, AR235:10, AR164:10, AR166:10, AR232:9, AR284:9, AR261:9, AR201:9, AR201:8, AR201:9, AR201:8, AR
				AR233:8, AR237:8, AR313:8, AR247:8, AR292:8, AR196:8, AR207:7, AR231:7, AR173:7, AR096:7,
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	H6EDX46	637786	604	
9	HABAG37	637942	16	AR313:22, AR161:16, AR162:16, AR165:16, AR163:16, AR166:16, AR173:16, AR164:16, AR178:15,
				AR196:14, AR089:14, AR212:14, AR235:14, AR229:13, AR293:13, AR258:13, AR299:13, AR096:13,
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				AR256:4, AR170:4, AR061:4, AR243:4, AR169:4 H0521:4, L0803:3, H0556:2, S0142:2, L0761:2, L0741:2,
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7	HACBD91	637482	17	AR055:116, AR283:103, AR060:91, AR089:55, AR235:53, AR299:52, AR185:51, AR104:49, AR096:34,
				AR039:30, AR282:30, AR316:29, AR261:29, AR196:24, AR218:23, AR219:21, AR272:20, AR300:20,
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				AR285:14, AR246:13, AR165:13, AR291:13, AR264:13, AR311:13, AR164:13, AR166:13, AR308:12,
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				AR181:9, AR266:9, AR312:9, AR227:9, AR257:9, AR175:9, AR289:9, AR232:9, AR189:8, AR297:8,
				AR053:8, AR033:8, AR190:8, AR245:8, AR296:8, AR193:8, AR258:8, AR255:8, AR239:7, AR260:7,
				AR173:7, AR198:7, AR293:7, AR199:7, AR250:7, AR243:6, AR247:6, AR274:6, AR211:6, AR205:6,
				AR203:6, AR213:6, AR178:6, AR226:5, AR256:5, AR231:5, AR294:5, AR270:5, AR204:5, AR176:5,
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				AR224.2, AR229.2, AR214.2, AR223.1, AR228.1, AR172.1, AR192.1 L0748.8, L0439.4, L0749.3, H0171.2,
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				S0260:1, S0452:1 and H0721:1.
∞	HACCI17	891114	18	AR251:15, AR310:9, AR273:8, AR265:7, AR248:6, AR241:5, AR052:5, AR312:5, AR274:5, AR215:5,
				AR313:4, AR263:4, AR309:4, AR170:4, AR243:4, AR235:4, AR053:4, AR213:4, AR249:3, AR271:3,
				[AR184:3, AR206:3, AR198:3, AR292:3, AR282:3, AR266:3, AR284:3, AR186:3, AR247:3, AR219:2,
				AR240:2, AR172:2, AR175:2, AR269:2, AR182:2, AR225:2, AR183:2, AR253:2, AR238:2, AR218:2,
				AR242.2, AR096:2, AR089:2, AR177:2, AR286:2, AR161:2, AR277:2, AR259:2, AR033:2, AR299:2,
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9 HAOCHI 731877 605 KR241:0 KR251, H0032, H0032, H0032, H0032, S00492, S00512, S00362, L03942, L05752, L03052, L07072, L0302, L0302, L07072, L0302, L07072, L0302, L07072, L0302, L07072, L0302, L07072, L0302, L07072,					AR257:1, AR289:1, AR275:1, AR296:1, AR199:1, AR283:1 L0809:11, L0794:10, L0770:9, S0474:5,
HACCI17 731877 605 HADA089 570689 19 TADCP14 757866 20					S6026:2, S0222:2, H0586:2, H0013:2, H0599:2, S0049:2, H0052:2, S0051:2, S0036:2, L3904:2, L5575:2,
HADCP14 757866 20					L3905:2, L0774:2, L0805:2, L0710:2, H0539:2, L0743:2, L0439:2, L07/56:2, L07/9:2, L07/80:2, H0624:1,
HADAO89 570689 19 HADCP14 757866 20					HOLVI:1, S0046:1, HO36/:1, HO466:1, S0260:1, HO543:1, L5565:1, L0800:1, L0783:1, L5622:1, L0665:1,
HADAO89 570689 19 HADCP14 757866 20					\$0216:1, H0693:1, L0438:1, H0520:1, H0593:1, \$0378:1, \$0044:1, H0555:1, \$0037:1, L0742:1, L0748:1,
HADAO89 570689 19 HADCP14 757866 20		HACC117	731877	605	
HADCP14 757866 20	٥	HADAO89	570689	61	AR241:10. AR161:10, AR162:10, AR165:10, AR163:10, AR196:10, AR164:10, AR166:10, AR242:9,
HADCP14 757866 20	ν	CONTROL OF	2007	:	AR313:8, AR264:8, AR173:7, AR193:6, AR203:6, AR181:6, AR244:5, AR262:5, AR212:5, AR180:5,
HADCP14 757866 20					AR199:5, AR263:5, AR200:5, AR257:5, AR192:5, AR275:5, AR174:5, AR233:5, AR308:5, ARUD3:5,
HADCP14 757866 20					AR198:4, AR247:4, AR230:4, AR191:4, AR228:4, AR239:4, AR252:4, AR254:4, AR312:4, AR300:4,
HADCP14 757866 20					AR240:4, AR236:4, AR195:4, AR189:4, AR201:4, AR309:4, AR297:4, AR255:4, AR089:4, ARZ/1:4,
HADCP14 757866 20					AR272;4, AR229;4, AR243;4, AR265;3, AR170;3, AR213;3, AR288;3, AR175;3, AR249;3, AR258;3,
HADCP14 757866 20					AR235:3, AR039:3, AR183:3, AR215:3, AR052:3, AR188:3, AR234:3, AR226:3, AR178:3, AR185:3,
HADCP14 757866 20					AR274.3, AR251.3, AR299.3, AR177.3, AR282.3, AR096.3, AR179.3, AR261.2, AR268.2, AR273.2,
HADCP14 757866 20					AR2777:2, AR225:2, AR269:2, AR293:2, AR267:2, AR248:2, AR311:2, AR169:2, AR238:2, AR237:2,
HADCP14 757866 20					AR237.7.3 AR291.2 AR316.2, AR186.2, AR296.2, AR033.2, AR315.2, AR285.2, AR231.2, AR270.2,
HADCP14 757866 20					AR287.2, AR218.2, AR190.2, AR222.2, AR182.2, AR060.2, AR286.2, AR104:1, AR281:1, AR260:1,
HADCP14 757866 20					AR219-1 AR290-1 AR289-1 AR204:1, AR310:1, AR232:1, AR210:1 H0427:1, L0766:1 and L0589:1.
2000 C	9	TIA DCB14	757066	20	AP103.8 AP183.7 AP268.7 AP269.7 AR173.7 AR240.7, AR166.6, AR238.6, AR237.6, AR165.6,
AR2215, AR26515, AR18415, AR29115, AR27015, AR17615, AR22615, AR29615, AR19915, AR25715, AR20015, AR26615, AR26615, AR20315, AR17515, AR27714, AR18814, AR18814, AR18814, AR17614, AR22814, AR21714, AR22514, AR28714, AR28714, AR23614, AR23614, AR28414, AR28414, AR28414, AR28414, AR28414, AR28414, AR28414, AR28414, AR28614, AR28613, AR28	⊇ —	HADCF14	000/6/	3	AR133.5, AR239.6, AR196.6, AR164.6, AR191.5, AR180.5, AR249.5, AR229.5, AR299.5, AR313.5,
AR257:5, AR200:5, AR260:5, AR266:5, AR203:5, AR175:5, AR227:4, AR188:4, AR168:4, AR189:4, AR228:4, AR228:4, AR225:4, AR247:4, AR297:4, AR267:4, AR267:4, AR256:4, AR267:4, AR297:4, AR297:4, AR297:4, AR297:4, AR297:3, AR2					AR247.5 AR265.5 AR184.5 AR291.5 AR270.5, AR176.5, AR061.5, AR226.5, AR296.5, AR199.5,
AR228:4, AR217:4, AR225:4, AR247:4, AR297:4, AR214:4, AR178:4, AR197:4, AR300:4, AR170:4, AR195:4, AR254:4, AR182:4, AR289:4, AR275:4, AR235:4, AR255:4, AR261:4, AR284:4, AR286:4, AR286:4, AR286:4, AR287:4, AR287:4, AR241:4, AR258:4, AR171:4, AR162:4, AR236:4, AR286:4, AR255:4, AR285:3, AR287:3, AR241:4, AR264:3, AR264:3, AR089:4, AR285:3, AR285:3, AR163:3, AR285:3, AR285:3, AR285:3, AR285:3, AR285:3, AR285:3, AR285:3, AR285:3, AR293:3, AR2					AR257:5, AR200:5, AR290:5, AR266:5, AR203:5, AR175:5, AR227:4, AR188:4, AR168:4, AR189:4,
AR195:4, AR254:4, AR182:4, AR289:4, AR235:4, AR235:4, AR261:4, AR284:4, AR267:4, AR262:4, AR250:4, AR250:4, AR284:4, AR281:4, AR267:4, AR261:4, AR268:4, AR171:4, AR162:4, AR236:4, AR286:3, AR261:4, AR268:4, AR171:4, AR162:4, AR236:4, AR289:4, AR285:3, AR263:3, AR265:3, AR264:3, AR266:3, AR266:3, AR266:3, AR293:3, AR293:2, AR296:2, AR309:2, AR8060:2, AR296:2, AR					AR228.4, AR217.4, AR225.4, AR247.4, AR297.4, AR214.4, AR178.4, AR197.4, AR300.4, AR170.4,
AR250:4, AR250:4, AR281:3, AR161:4, AR241:4, AR258:4, AR171:4, AR162:4, AR236:4, AR089:4, AR255:4, AR288:3, AR163:3, AR253:3, AR216:3, AR264:3, AR264:3, AR096:3, AR177:3, AR213:3, AR292:3, AR282:3, AR282:3, AR292:3, AR282:3, AR286:3, AR282:3, AR282:2, AR309:2, AR309:2, AR306:2, AR286:2, AR286:2, AR286:3, AR286:3, AR282:3, AR288:2, AR286:2, AR282:2, AR309:2, AR306:2, AR286:2, AR2					AR195:4, AR254:4, AR182:4, AR289:4, AR275:4, AR232:4, AR235:4, AR261:4, AR284:4, AR267:4,
AR089:4, AR255:4, AR285:3, AR163:3, AR255:3, AR265:3, AR181:3, AR264:3, AR096:3, AR177:3, AR213:3, AR292:3, AR282:3, AR285:3, AR285:3, AR285:3, AR285:3, AR285:3, AR212:3, AR212:3, AR245:3, AR245:3, AR245:3, AR245:3, AR245:3, AR246:3, AR246:3, AR230:3, AR271:3, AR277:3, AR277:3, AR205:3, AR283:3, AR286:3, AR286:3, AR207:3, AR222:3, AR192:3, AR222:3, AR286:3, AR286:3, AR286:3, AR222:3, AR277:3, AR288:2, AR260:2, AR169:2, AR309:2, AR060:2, AR256:2, AR2					AR256.4 AR250.4 AR234.4, AR287.4, AR161.4, AR241.4, AR258.4, AR171.4, AR162.4, AR236.4,
AR295:3, AR295:3, AR282:3, AR053:3, AR186:3, AR295:3, AR263:3, AR174:3, AR311:3, AR293:3, AR190:3, AR293:3, AR298:3, AR185:3, AR246:3, AR245:3, AR212:3, AR212:3, AR246:3, AR246:3, AR230:3, AR201:3, AR271:3, AR205:3, AR316:3, AR283:3, AR283:3, AR286:3, AR207:3, AR222:3, AR192:3, AR316:3, AR222:3, AR222:3, AR288:2, AR260:2, AR169:2, AR309:2, AR060:2, AR256:2, AR256:2, AR256:2, AR266:3, AR266:3, AR266:3, AR266:2, AR266:2, AR309:2, AR060:2, AR256:2, AR266:2, AR2					AR089-4, AR255-4, AR285:3, AR163:3, AR253:3, AR216:3, AR181:3, AR264:3, AR096:3, AR177:3,
AR190:3, AR243:3, AR298:3, AR185:3, AR210:3, AR245:3, AR212:3, AR033:3, AR204:3, AR204:3, AR246:3, AR230:3, AR230:3, AR271:3, AR271:3, AR205:3, AR316:3, AR316:3, AR283:3, AR211:3, AR207:3, AR222:3, AR192:3, AR179:3, AR312:3, AR223:3, AR248:3, AR231:3, AR310:3, AR286:3, AR224:3, AR277:3, AR252:3, AR288:2, AR260:2, AR169:2, AR309:2, AR060:2, AR256:2					AR295:3, AR292:3, AR282:3, AR053:3, AR186:3, AR295:3, AR263:3, AR174:3, AR311:3, AR293:3,
AR246:3, AR230:3, AR201:3, AR271:3, AR274:3, AR205:3, AR316:3, AR198:3, AR283:3, AR211:3, AR207:3, AR222:3, AR192:3, AR179:3, AR312:3, AR223:3, AR248:3, AR231:3, AR310:3, AR310:3, AR277:3, AR252:3, AR288:2, AR260:2, AR169:2, AR309:2, AR060:2, AR256:2, AR260:2, AR260:2, AR260:2, AR260:2, AR265:2, AR260:2, AR2					AR190:3 AR243:3, AR298:3, AR185:3, AR210:3, AR245:3, AR233:3, AR212:3, AR033:3, AR204:3,
AR207:3, AR222:3, AR192:3, AR179:3, AR312:3, AR248:3, AR248:3, AR310:3, AR310:3, AR286:3, AR224:3, AR224:3, AR277:3, AR252:3, AR288:2, AR260:2, AR169:2, AR294:2, AR309:2, AR060:2, AR256:2,					AR246:3, AR230:3, AR201:3, AR271:3, AR274:3, AR205:3, AR316:3, AR198:3, AR283:3, AR211:3,
AR224:3, AR277:3, AR252:3, AR288:2, AR260:2, AR169:2, AR294:2, AR309:2, AR060:2, AR256:2,					AR207:3, AR222:3, AR192:3, AR179:3, AR312:3, AR223:3, AR248:3, AR231:3, AR310:3, AR286:3,
					AR224:3, AR277:3, AR252:3, AR288:2, AR260:2, AR169:2, AR294:2, AR309:2, AR060:2, AR256:2,

				AR172:2, AR308:2, AR218:2, AR219:2, AR273:2, AR052:2, AR272:2, AR055:1, AR104:1, AR215:1,
				AR206:1, AR221:1, AR251:1, AR259:1 H0637:1 and H0427:1.
=	HAGAI85	381942	21	AR282:65, AR104:12, AR218:12, AR240:12, AR096:11, AR219:11, AR316:8, AR185:8, AR060:7, AR299:7,
				AR055:6, AR300:4, AR089:4, AR277:4, AR039:3, AR283:3, AR313:3 L0754:14, H0575:4, L0742:3,
				L0752:3, S0010:2, H0494:2, H0521:2, L0748:2, L0749:2, L0758:2, L0759:2, H0445:2, H0220:1, H0402:1,
				S0376:1, S0132:1, H0250:1, H0581:1, H0052:1, S0051:1, H0356:1, H0375:1, H0039:1, H0644:1, H0628:1,
				S0036:1, H0591:1, H0616:1, S0440:1, H0641:1, S0344:1, S0002:1, L0638:1, L0639:1, L0764:1, L0662:1,
				L0768:1, L0606:1, L0659:1, L0663:1, L0665:1, L0438:1, H0547:1, H0659:1, S0392:1, S0028:1, L0741:1,
				L.0731:1, L.0757:1 and S0031:1.
12	HAGAM64	626997	22	AR169:7, AR170:4, AR171:3, AR168:2, AR180:2, AR183:2, AR188:2, AR257:2, AR311:1, AR264:1,
				AR178:1, AR261:1, AR313:1, AR308:1, AR243:1, AR225:1, AR235:1, AR196:1, AR282:1, AR255:1,
				AR096:1, AR269:1, AR277:1 S0030:1, S0010:1 and L0369:1.
13	HAGAN21	1026956	23	AR235:3, AR170:3, AR269:3, AR282:2, AR309:2, AR168:2, AR271:2, AR263:2, AR215:2, AR197:2,
				AR261:1, AR224:1, AR266:1, AR177:1, AR161:1, AR195:1, AR165:1, AR178:1, AR277:1, AR162:1,
				AR213:1, AR164:1 S0010:2, S0360:1, H0560:1, L0/48:1 and n0443:1.
	HAGAN21	864914	909	
	HAGAN21	902027	209	
	HAGAN21	902056	809	
	HAGAN21	902025	609	
14	HAGBZ81	456414	24	AR219:618. AR218:563. AR274:387, AR253:355, AR210:339, AR270:324, AR254:310, AR312:287,
•			i	AR205:286. AR308:285. AR272:256. AR271:246, AR173:243, AR213:238, AR313:237, AR096:235,
				AR269.778 AR250.228 AR212.219 AR183.215, AR290.208, AR245:198, AR175:191, AR039:182,
				AR178:182. AR309:180. AR264:177. AR180:176, AR268:171, AR282:171, AR211:163, AR263:158,
				AR246:156, AR053:156, AR267:150, AR089:150, AR174:147, AR179:145, AR311:144, AR176:143,
				JAR182:142, AR162:141, AR293:140, AR192:134, AR252:132, AR060:130, AR247:127, AR166:126,
				AR165:126, AR161:124, AR164:121, AR163:120, AR316:117, AR198:112, AR216:111, AR185:107,
				AR288:106, AR256:106, AR275:100, AR297:98, AR240:98, AR193:96, AR197:96, AR299:96, AR243:95,
				AR181:92, AR177:90, AR172:89, AR266:87, AR217:87, AR300:86, AR201:86, AR222:83, AR277:81,
				AR189:78, AR242:78, AR237:73, AR289:73, AR231:71, AR104:68, AR291:66, AR195:66, AR238:65,
				AR224:61, AR230:60, AR296:60, AR226:59, AR169:59, AR294:58, AR171:55, AR229:55, AR204:54,
				AR033:53, AR190:53, AR260:52, AR295:52, AR188:51, AR239:46, AR225:46, AR214:46, AR232:43,
				AR287:41, AR168:40, AR191:40, AR061:40, AR285:34, AR221:32, AR234:32, AR283:30, AR227:27,
				AR170:25, AR255:25, AR233:24, AR286:22, AR236:21, AR199:20, AR262:20, AR258:20, AR228:19,

				AR215:17, AR200:17, AR203:16, AR207:14, AR223:14, AR257:12, AR196:12, AR055:11, AR261:10,
				AR235:4 S6026:1, S0010:1, H0399:1, L0435:1, L0438:1 and S0031:1.
15	HAGDG59	534165	25	AR299:24, AR251:24, AR206:23, AR205:21, AR248:20, AR252:20, AR244:19, AR039:18, AR238:18,
				AR186:18, AR254:16, AR263:14, AR207:14, AR250:14, AR275:13, AR249:13, AR264:13, AR246:12,
	,			AR181:12, AR241:12, AR204:11, AR274:11, AR269:11, AR202:11, AR185:10, AR253:10, AR243:10,
				AR292:10, AR052:9, AR265:9, AR310:9, AR060:9, AR309:9, AR191:9, AR190:9, AR273:8, AR161:8,
				AR268:8, AR316:8, AR162:8, AR270:8, AR189:8, AR163:8, AR240:8, AR055:8, AR312:8, AR089:8,
				AR226:8, AR096:7, AR033:7, AR290:7, AR183:7, AR237:7, AR194:7, AR177:7, AR198:7, AR174:7,
				AR313.7, AR201:7, AR271:7, AR104:7, AR192:7, AR175:6, AR272:6, AR213:6, AR291:6, AR239:6,
				AR179:6, AR235:6, AR165:6, AR061:6, AR296:6, AR055:6, AR308:6, AR164:5, AR267:5, AR188:5,
				AR284:5, AR227:5, AR166:5, AR298:5, AR176:5, AR266:5, AR178:5, AR182:5, AR234:5, AR212:5,
				AR300.5, AR277.5, AR295.4, AR193.4, AR282.4, AR293.4, AR232.4, AR229.4, AR285.4, AR311:4,
				AR196:4, AR231:4, AR247:4, AR173:3, AR184:3, AR245:3, AR218:3, AR233:3, AR283:3, AR203:3,
				AR197.3. AR289.3. AR257.3. AR261.3, AR294.3, AR297.2, AR219.2. AR242.2, AR217.2, AR288.2,
				AR286:2, AR255:2, AR195:2, AR259:2, AR256:2, AR260:2, AR180:2, AR228:2, AR210:2, AR199:2,
				AR224:1 AR211:1 AR230:1 AR236:1 AR287:1 S0422:22, S0408:9, L0659:9, S0438:8, S0354:6, L0754:6,
				S0126.5. H0543.5. S0358.4. S0444.4. S0406.4, H0436.4, L0740.4, L0777.4, H0144.3, S0374.3, L0750.3,
				1,0599;3, H0170;2, H0717;2, H0740;2, S0360;2, S0410;2, H0747;2, H0749;2, H0587;2, H0574;2, H0486;2,
				H0575;2, H0036;2, S0003;2, H0622;2, L0475;2, H0509;2, L0667;2, L0771;2, L0662;2, L0766;2, L0804;2,
				L0809:2, L0790:2, L3667:2, H0710:2, L0748:2, L0745:2, L0749:2, L0731:2, S0026:2, H0422:2, H0171:1,
				H0686:1, S0040:1, H0716:1, L0785:1, L2991:1, S0212:1, L0946:1, S0442:1, L1446:1, H0393:1, L0717:1,
				H0441:1, H0497:1, H0427:1, H0590:1, S0346:1, S0474:1, H0581:1, H0746:1, H0050:1, H0239:1, H0510:1,
				H0266:1, H0553:1, H0169:1, H0264:1, H0494:1, S0450:1, S0440:1, H0654:1, H0652:1, S0344:1, H0529:1,
				H0026:1, L0371:1, L0372:1, L0764:1, L0521:1, L0768:1, L0649:1, L0652:1, L0653:1, L0661:1, L0367:1,
				L0663:1, L0665:1, S0428:1, L2258:1, L2260:1, H0699:1, H0547:1, H0670:1, H0660:1, S0330:1, S0378:1,
				H0518:1, H0521:1, H0522:1, S0028:1, L0744:1, L0439:1, L0751:1, S0031:1, S0260:1, L0581:1, L0362:1,
				H0136:1, S0276:1, H0506:1 and H0721:1.
16	HAGDS20	544966	56	AR170:4, AR161:4, AR162:4, AR266:4, AR163:4, AR309:3, AR176:3, AR225:3, AR274:3, AR224:3,
?				AR033:3, AR275:3, AR272:3, AR264:3, AR267:3, AR243:3, AR254:3, AR269:3, AR228:3, AR178:3,
				[AR165:3, AR289:3, AR270:3, AR195:3, AR262:3, AR233:2, AR311:2, AR207:2, AR171:2, AR166:2,
				AR291:2, AR182:2, AR181:2, AR282:2, AR239:2, AR271:2, AR237:2, AR196:2, AR226:2, AR257:2,
				AR296:2, AR229:2, AR286:2, AR177:2, AR231:2, AR288:2, AR173:2, AR294:2, AR175:2, AR221:2,
				AR293:2, AR247:2, AR285:2, AR104:2, AR174:2, AR200:2, AR290:2, AR268:2, AR255:2, AR287:2,
				AR183:2, AR199:2, AR188:2, AR227:2, AR313:2, AR308:1, AR189:1, AR277:1, AR055:1, AR061:1,

				AR240:1, AR261:1, AR232:1, AR164:1, AR230:1, AR295:1, AR297:1, AR300:1, AR191:1, AR185:1,
				AK1/9:1, AK234:1, AK108:1, AK299:1, AK209:1, LO459:0, LO177:1, LO438:1, LO779:1, LO779:1, LO755:1 and S0222:1, H0438:1, S0010:1, H0052:1, S6028:1, H0040:1, L0803:1, L4501:1, L3812:1, L0779:1, L0755:1 and L0758:1
17	HAGFG51	823509	27	AR176:8, AR250:6, AR233:6, AR269:5, AR223:5, AR182:5, AR267:5, AR228:5, AR173:5, AR236:5, AR176:8, AR181:5, AR180:4, AR161:4, AR162:4, AR257:4, AR177:4, AR229:4, AR163:4,
				AR256:4, AR239:4, AR178:4, AR179:4, AR183:4, AR216:4, AR294:4, AR270:4, AR191:4, AR300:4,
				AR262:4, AR261:4, AR175:4, AR060:4, AR255:4, AR199:4, AR055:4, AR297:3, AR235:3, AR238:3,
				AR096:3, AR234:3, AR174:3, AR200:3, AR291:3, AR288:3, AR231:3, AR247:3, AR203:3, AR293:3,
		•	_	AR170:3, AR287:3, AR168:3, AR252:3, AR226:3, AR215:3, AR286:3, AR268:3, AR258:3, AR275:3,
				AR290:3, AR197:3, AR039:3, AR299:3, AR061:3, AR296:3, AR230:3, AR188:3, AR282:3, AR240:3,
				AR214:3, AR285:3, AR171:3, AR313:3, AR227:3, AR232:2, AR295:2, AR311:2, AR264:2, AR089:2,
_				AR190:2, AR272:2, AR185:2, AR289:2, AR172:2, AR217:2, AR192:2, AR189:2, AR263:2, AR316:2,
				AR242.2, AR210.2, AR277.2, AR225.2, AR271.2, AR260.2, AR218:1, AR256:1, AR219.1, AR104:1,
				AR033:1 S0010:1
8	HAHDB16	635412	28	AR196;15, AR181;13, AR176;13, AR182;13, AR173:13, AR178:12, AR165:12, AR175:12, AR188:12,
?				AR164:12, AR269:11, AR166:11, AR183:11, AR226:11, AR229:10, AR238:10, AR293:10, AR268:10,
				AR309.10, AR174.10, AR270.9, AR233.9, AR313.9, AR162.9, AR179.9, AR247.9, AR161.9, AR235.9,
				AR257.9, AR180.9, AR228.9, AR236.9, AR163.8, AR266.8, AR177.8, AR192.8, AR261.8, AR296.8,
				AR189:8, AR267:8, AR231:8, AR290:8, AR237:8, AR191:8, AR275:8, AR299:8, AR198:7, AR264:7,
				AR239.7. AR253.7, AR300.7, AR289.7, AR286.7, AR262.7, AR227.7, AR053.6, AR096.6, AR255.6,
				AR225:6, AR197:6, AR190:6, AR201:6, AR242:6, AR297:6, AR240:6, AR207:6, AR312:6, AR291:6,
				AR245:6, AR294:6, AR271:6, AR234:6, AR258:6, AR200:6, AR199:6, AR203:5, AR193:5, AR172:5,
				AR274:5, AR285:5, AR295:5, AR089:5, AR287:5, AR204:5, AR288:5, AR263:5, AR311:4, AR061:4,
				AR230:4, AR212:4, AR195:4, AR272:4, AR033:4, AR224:4, AR168:4, AR185:4, AR243:4, AR055:4,
				AR246:4, AR205:4, AR232:3, AR316:3, AR222:3, AR039:3, AR216:3, AR254:3, AR213:3, AR260:3,
	-			AR060:3, AR250:3, AR282:3, AR223:3, AR210:3, AR217:3, AR277:3, AR214:3, AR308:2, AR256:2,
				AR211:2, AR218:2, AR170:2, AR171:2, AR283:2, AR221:2, AR219:2, AR104:2, AR252:1 H0599:1
19	HAHDR32	635357	29	AR055:27, AR235:20, AR283:12, AR236:10, AR266:9, AR261:9, AR161:9, AR162:9, AR163:8, AR176:8,
				AR293:8, AR256:7, AR197:6, AR089:6, AR295:6, AR180:6, AR294:6, AR262:6, AR204:6, AR289:6,
				AR165:6, AR182:6, AR296:6, AR285:6, AR164:5, AR166:5, AR060:5, AR291:5, AR181:5, AR239:5,
		-		AR250:5, AR297:5, AR268:5, AR257:5, AR229:5, AR267:5, AR309:5, AR183:5, AR260:5, AR228:5,
			_	AR237:5, AR272:5, AR178:5, AR201:4, AR214:4, AR193:4, AR299:4, AR053:4, AR253:4, AR223:4,
				AR233:4, AR271:4, AR316:4, AR269:4, AR287:4, AR169:4, AR224:4, AR252:4, AR104:4, AK177:4,

				AR270:4, AR039:4, AR179:4, AR255:4, AR238:4, AR226:3, AR196:3, AR274:3, AR175:3, AR264:3, AR207:3, AR300:3, AR185:3, AR230:3, AR203:3, AR203:3, AR203:3, AR207:3, AR200:3, AR200:2, AR2
		- 		AR200:2, AR246:2, AR221:2, AR171:2, AR275:2, AR188:2, AR191:2, AR216:2, AR218:2, AR190:2, AR189:2, AR263:2, AR212:2, AR172:2, AR033:2, AR205:2, AR211:1, AR277:1, AR217:1, AR173:1,
				AR195:1 L0471:7, L0750:6, H0599:4, H0373:2, L0163:2, L0761:2, L0748:2, H0735:1, H0619:1, H0002:1, S0010:1, H0050:1, H0477:1, L0770:1, L0372:1, L0662:1, L0526:1, L0663:1, L0747:1, L0755:1, L0731:1,
				L0584:1 and H0506:1.
20	HAB071	490848	30	AR253:6, AR263:4, AR309:4, AR252:4, AR228:4, AR195:4, AR243:3, AR169:3, AR261:3, AK311:3,
				AR234:3, AR220:3, AR291:3, AR163:3, AR275:3, AR161:3, AR217:3, AR166:3, AR197:3, AR250:3,
				AR055:3, AR282:3, AR236:3, AR162:3, AR060:3, AR164:3, AR239:3, AR168:2, AR207:2, AR290:2,
				AR175:2, AR293:2, AR196:2, AR268:2, AR271:2, AR269:2, AR215:2, AR189:2, AR201:2, AR266:2,
				AR185:2, AR033:2, AR183:2, AR214:2, AR212:2, AR191:2, AR274:2, AR289:2, AR270:2, AR225:2,
				AR177:2, AR287:2, AR257:2, AR272:2, AR316:2, AR178:2, AR295:2, AR173:4, AR199:4, AR277:4,
				AR238:2, AR286:2, AR312:2, AR255:2, AR267:2, AR229:1, AR179:1, AR200:1, AR231:1, AR089:1,
				AR096:1, AR176:1, AR262:1, AR313:1, AR240:1, AR258:1, AR285:1, AR235:1, AR193:1, AR230:1,
				AR039:1, AR190:1, AR299:1, AR260:1, AR104:1, AR188:1, AR300:1, AR225:1, AK283:1, AK232:1,
				AR308:1 H0657:1, S0212:1, S0360:1, S0132:1, H0628:1, L0766:1, L0803:1, L0776:1, H0539:1, L0731:1 and
				H0422.1.
21	HAIBP89	727543	31	AR291:10, AR296:10, AR296:10, AR298:9, AR165:8, AR170:8, AR100:8, AR100:8, AR165:9, AR166:1, AR166:1
				AR180:7, AR289:7, AR270:7, AR052:7, AR183:7, AR284:7, AR192:7, AK244:1, AK101:1, AK100:7,
				AR297:7, AR261:7, AR162:7, AR163:6, AR225:6, AR207:6, AR197:6, AK250:6, AR309:6, AR462:0,
				AR255:6, AR285:6, AR257:6, AR214:6, AR287:6, AR265:6, AR266:6, AK204:6, AK2/3:0, AK312:0,
				AR178:6, AR247:5, AR184:5, AR294:5, AR246:5, AR224:5, AR292:5, AK175:5, AK198:5, AK204:5,
				AR181:5, AR263:5, AR201:5, AR267:5, AR290:5, AR053:5, AR286:5, AR193:5, AR212:5, AR413:5,
				AR202:5, AR236:5, AR288:5, AR293:5, AR168:5, AR240:5, AR217:5, AR308:5, AR169:5, AR254:4,
				AR248:4, AR206:4, AR216:4, AR231:4, AR061:4, AR249:4, AR205:4, AR173:4, AR253:4, AR273:4,
				AR235:4, AR229:4, AR174:4, AR055:4, AR238:4, AR243:4, AR089:4, AR233:4, AR1/1:4, AR1/9:4,
				AR199:4, AR228:4, AR189:4, AR262:4, AR283:4, AR177:4, AR196:4, AR310:4, AR170:4, AK239:3,
				AR295:3, AR188:3, AR311:3, AR096:3, AR221:3, AR185:3, AR314:3, AR313:3, AR190:3, AK234:3,
				AR271:3, AR300:3, AR104:3, AR203:3, AR191:3, AR200:3, AR258:3, AR316:3, AR223:3, AR230:3,
				AR245:3, AR195:3, AR033:3, AR060:3, AR277:3, AR237:3, AR251:3, AR212:5, AR220:3, AR112:2,

				AR299:2, AR227:2, AR232:2, AR039:2, AR219:2, AR280:2, AR211:2, AR259:2, AR215:2, AR256:2, AR218:2, AR210:1, AR241:1, AR260:1, AR274:1, AR315:1
				H0250:0, L0703:0, L0747:0, H027:1, 1305:13, L0438:3, L0438:3, H0547:3, S0406:3, L0758:3, H0542:3, S0222:3, H0620:3, H0617:3, H0412:3, L3905:3, L0659:3, L0438:3, H0547:3, S0406:3, H0566:2, H0566:2, H0664:2, S0360:2, H0734:2, S0132:2, L0471:2, H0012:2, S0388:2, H0266:2, H087:2, H0646:2, H0664:2, H0664
				L0662:2, L0766:2, L0352:2, S0404:2, L0744:2, L0779:2, L0757:2, S0436:2, L0396:2, H0543:2, H0423:2, S0040:1, H0638:1, S0420:1, S0354:1, S0358:1, S0376:1, L3649:1, H0728:1, S0046:1, L2817:1, L0717:1,
				S0278:1, H0369:1, H0392:1, H0592:1, L0623:1, H0486:1, S0280:1, T0048:1, S0049:1, H0052:1, H0194:1, H0597:1, H0231:1, H0320:1, H0107:1, S6028:1, H0292:1, H0039:1, H0628:1, H0181:1, H0182:1, H0606:1,
_				H0673:1, H0591:1, H0040:1, H0551:1, H0494:1, H0561:1, S0142:1, S0344:1, S0002:1, L0369:1, L0640:1,
				L0371:1, L3904:1, L0372:1, L0646:1, L0764:1, L0648:1, L0708:1, L0774:1, L0770:1, L0635:1, L0517:1, L0517:1, L0566:1, L0666:1, L06
				L2413:1, T0068:1, L3811:1, H0519:1, H0682:1, H0684:1, H0658:1, H0539:1, S0380:1, H0518:1, S0152:1, H0522:1, L0745:1, L0749:1, L0755:1, L0731:1, H0445:1, L0599:1, H0665:1 and H0008:1.
	HAIBP89	371337	610	
22	HAICP19	422672	32	AR277:26, AR283:23, AR219:15, AR089:14, AR282:14, AR185:14, AR240:14, AR218:13, AR316:13,
				AR104:12, AR055:12, AR096:12, AR299:12, AR039:11, AR300:11, AR000:11, AR513:9 IN016:3, L07333:4, L073333:4, L07333:4, L07333:4, L07333:4, L07333:4, L07333:4, L07333:4
				80436:3, 80336:2, H0253:2, H0309:2, H0123:2, H0333:3; L0309:2, L03171:2, L0774:2, L0309:2; L0306:2; L0
				100000.2, 107522.2, 100001.2, 1000001.2, 10000001.2, 1000001.1, 1001001.1, 1000001.1, 1000001.1, 1001001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1, 1001001.1,
				80364:1, S0366:1, H0087:1, H0379:1, S0438:1, S0440:1, H0509:1, L0769:1, L0662:1, L0766:1, L0803:1,
				L0804:1, L0375:1, L4669:1, L0528:1, L0663:1, L2651:1, L3811:1, H0670:1, S0028:1, L0747:1, L0779:1,
				L0777:1, S0434:1, S0276:1, S0196:1 and H0542:1.
23	HAIFL18	676933	33	AR052:33, AR259:29, AR184:29, AR292:27, AR249:26, AR310:25, AR309:22, AR265:21, AR298:20,
				AR314:20, AR313:19, AR315:18, AR284:18, AR280:18, AR269:17, AR293:17, AR312:10, AR247:13,
_				AR229;15, AR218:15, AR294:14, AR061:14, AR185:14, AR219:14, AR035:14, AR256:13, AR256:14, AR253:17, AP257:13
				AR227.12, AR175:12, AR266:12, AR096:12, AR238:12, AR296:11, AR267:11, AR299:11, AR053:11,
				AR295:11, AR270:11, AR285:11, AR055:10, AR290:10, AR286:10, AR232:10, AR283:10, AR213:10,
				AR256:10, AR177:10, AR282:10, AR185:9, AR234:9, AR291:9, AR268:9, AR263:8, AR289:8, AR316:8,
				AR273:8, AR089:7, AR104:6, AR179:6, AR251:6, AR194:6, AR277:5, AR245:5, AR240:4, AR253:4,
				AR060:4, AR271:4, AR206:4, AR192:3, AR274:3, AR198:3, AR170:2, AR275:2, AR168:2, AK205:2,
_				AR225:2, AR178:2, AR204:2, AR216:2, AR172:2, AR243:2, AR217:1, AR241:1, AR214:1, AR214:1,
				AR288:1, AR224:1, AR193:1, AR162:1 H0265:1, H0159:1, S0132:1, H05/4:1, H00/5:1, 10042:1, H0309:1

				land S0434:1.
24	HAJAF57	823516	34	AR254:4, AR171:3, AR207:3, AR170:3, AR169:3, AR2053:3, AR213:2, AR225:2, AR271:2, AR165:2, AR198:2, AR201:2, AR166:2, AR166:2, AR264:2, AR282:2, AR272:2, AR089:2, AR207:2, AR288:2, AR257:2, AR188:2, AR224:1, AR163:1, AR163:1, AR188:1, AR193:1, AR183:1, AR183:1, AR183:1, AR193:1, AR
25	HAJBR69	638516	35	AR309:4, AR242:3, AR217:3, AR225:3, AR225:3, AR170:2, AR252:2, AR265:2, AR180:2, AR171:2, AR282:2, AR221:2, AR197:2, AR200:2, AR196:2, AR308:2, AR277:2, AR165:1, AR164:1, AR215:1, AR192:1, AR165:1, AR268:1, AR168:1, AR204:1, AR211:1, AR207:1, AR283:1, AR216:1, AR204:1, AR311:1, AR240:1, AR182:1 S0040:4, T0010:4, H0560:4, L0794:4, S0420:3, L0455:3, L3905:3, H0656:2, S0212:2, H0619:2, H0497:2, H0052:2, H0012:2, H0429:2, L0766:2, L5623:2, L0439:2, H0665:2, H0556:1, H0717:1, H0650:1, H0736:1, H0734:1, H0734:1, H0734:1, H0592:1, H0593:1, H0561:1, L2263:1, L0370:1, H0593:1, S0126:1, H0435:1, H0518:1, H0520:1, H0626:1, L0748:1, S0436:1, L0591:1, H0542:1, S0424:1 and H0677:1.
26	HAJBZ75	618530	36	AR280:11, AR281:10, AR315:9, AR314:9, AR270:8, AR165:8, AR271:7, AR164:7, AR166:7, AR1625.7, AR280:11, AR281:10, AR315:9, AR314:9, AR270:8, AR275:8, AR165:6, AR183:6, AR173:6, AR161:7, AR162:7, AR163:7, AR268:7, AR245:7, AR180:7, AR180:6, AR309:6, AR309:6, AR308:6, AR188:6, AR175:6, AR271:6, AR269:6, AR309:6, AR308:6, AR188:5, AR247:5, AR267:6, AR207:5, AR182:5, AR218:5, AR242:5, AR207:5, AR182:5, AR218:5, AR242:5, AR207:5, AR207:5, AR180:5, AR244:5, AR222:5, AR274:5, AR222:4, AR282:4, AR221:4, AR292:4, AR207:4, AR282:4, AR207:4, AR282:4, AR207:4, AR282:4, AR207:4, AR292:4, AR207:4, AR292:4, AR207:4, AR292:4, AR207:4, AR292:4, AR207:4, AR207:4, AR207:4, AR207:4, AR207:3, H0050:3, L0771:3, L0666:3, L0777:3, L0666:3, L0770:3, L0770:2, L0770:2

				H0746:1, H0596:1, T0110:1, H0327:1, H0009:1, H0051:1, S0051:1, H0284:1, H0039:1, H0068:1, H0400:1,
				H0623:1, H0100:1, H0560:1, H0561:1, H0509:1, S0344:1, L0763:1, L0796:1, L0772:1, L0776:1, L0776:1, L0776:1, L0809:1, L0263:1, H0144:1, L2709:1, H0547:1, H0593:1, S0126:1, L3199:1,
				H0690:1, H0658:1, S0330:1, S0152:1, H0521:1, S0044:1, S0392:1, L0747:1, L0749:1, L0750:1, L0755:1,
27	HAMFC93	904749	37	AR316:210, AR089:205, AR313:203, AR205:188, AR096:145, AR299:140, AR219:119, AR245:111,
•				[AR185:109, AR252:108, AR218:107, AR039:106, ARZ74:101, ARZ46:90, AR035:31, AR137:03, ARZ20:03, ARZ20:03, AR273:03, AR218:107, AR246:72, AR213:73, AR204:72,
				AR216.72, AR201:72, AR243:68, AR282:67, AR322:66, AR312:66, AR242:63, AR060:62, AR277:62,
				AR165:62, AR308:61, AR193:60, AR198:60, AR309:59, AR164:59, AR300:59, AR104:57, AR311:57,
				AR223:57, AR162:56, AR161:56, AR250:54, AR166:54, AR163:54, AR192:54, AR217:53, AR253:51,
				AR264:50, AR263:49, AR169:49, AR240:44, AR224:41, AR247:39, AR275:39, AR171:35, AR168:34,
				AR179;31, AR207;31, AR174;30, AR172;30, AR225;30, AR210;28, AR236;27, AR177;26, AR189;26,
				AR291:26, AR178:25, AR180:24, AR288:24, AR211:24, AR183:23, AR296:22, AR230:22, AR061:22,
				AR033:22, AR173:22, AR175:21, AR170:21, AR295:21, AR297:21, AR268:21, AR269:21, AR293:21,
				AR266:21, AR290:20, AR270:20, AR181:20, AR267:20, AR237:20, AR231:20, AR289:19, AR229:17,
				AR285.17, AR238.17, AR176.17, AR215.16, AR221.16, AR234.16, AR190.15, AR226.15, AR233.15,
				AR182:14, AR286:14, AR235:14, AR239:14, AR287:14, AR232:14, AR227:13, AR294:13, AR255:13,
				AR256:13, AR228:13, AR199:12, AR261:11, AR257:10, AR258:10, AR262:10, AR188:9, AR260:8, AR200:6,
				AR203:6, AR191:5, AR196:4 L0439:20, L0438:14, L0803:9, L0754:6, L0770:5, L0747:5, L0777:5, H0622:4,
				L0740:4, L3643:3, H0551:3, L0749:3, L0755:3, H0624:2, H0485:2, H0013:2, H0052:2, L0651:2, L0378:2,
				S0374:2, L0743:2, L0752:2, L0759:2, H0423:2, H0171:1, H0556:1, S0442:1, S0376:1, S0360:1, H0722:1,
				H0733:1, S0222:1, H0497:1, H0574:1, H0069:1, H0427:1, L0021:1, S0010:1, S0346:1, H0596:1, H0046:1,
				H0562:1, H0569:1, L0471:1, L0163:1, H0510:1, H0179:1, S0250:1, L0483:1, H0616:1, H0413:1, H0494:1,
				S0014:1, H0560:1, S0438:1, S0150:1, H0641:1, H0646:1, S0142:1, S0422:1, L0520:1, L0769:1, L0667:1,
				L0662:1, L0794:1, L0766:1, L0649:1, L0804:1, L0774:1, L0775:1, L0655:1, L0659:1, L0809:1, L0664:1,
				H0703:1, L3825:1, S0126:1, H0435:1, H0659:1, H0670:1, S0328:1, S0378:1, H0696:1, S0406:1, S0028:1,
				L0751:1, L0756:1, L0780:1, L0731:1 and L0758:1.
	HAMFC93	900286	611	
	HAMFC93	906819	612	
28	HAMFK58	647105	38	AR271:14, AR195:14, AR196:12, AR162:11, AR161:11, AR201:10, AR163:9, AR089:9, AR188:8, AR165:8,
				AR272:8, AR164:8, AR197:7, AR243:7, AR199:7, AR253:7, AR245:7, AR246:6, AR207:5, AR219:5,
				AR203:5, AR205:5, AR200:5, AR053:5, AR242:5, AR218:5, AR275:4, AR193:4, AR311:4, AR191:4,
				AR039:4, AR166:4, AR212:4, AR1/4:4, AR264:4, AR180:4, AR215:4, AR210:4, AR210:4, AR210:4,

				AR192:4, AR312:3, AR240:3, AR213:3, AR181:3, AR316:3, AR175:3, AR269:3, AR313:3, AR231:3,
				AR247:3, AR214:3, AR250:3, AR290:3, AR204:3, AR221:3, AR060:3, AR261:3, ARZ/0:3, ARZ/9:3, AR292:3, AR260:3, AR2
				AR169:3, AR230:2, AR113:2, AR185:2, AR268:2, AR182:2, AR237:2, AR216:2, AR238:2, AR288:2,
				AR230.2, AR226.2, AR257.2, AR033.2, AR179.2, AR176.2, AR255.2, AR227.2, AR267.2, AR277.2,
				AR283:2, AR168:2, AR263:2, AR258:2, AR229:2, AR055:2, AR232:2, AR239:2, AR285:2, AR233:2,
				AR224:1, AR295:1, AR287:1, AR297:1, AR291:1, AR309:1, AR286:1, AR300:1, AR300:1, AR262:1,
				AR282:1, AR289:1, AR296:1 L0748:10, S0476:6, H0013:6, H0547:6, L0439:6, L0754:6, H0556:5, H0052:5,
				1.0593;5, S0418;4, H0046;4, H0024;4, L0662;4, L0766;4, L0657;4, L0666;4, H0144;4, L5626;4, L5777;4, L5626;4, L5777;4, L5778;4, L5778;5, L5
				H0692:3, 30338:3, 30440:3, L0320:3, L0039:3, H0059:3, L0333:3, L0333:3, L0333:3, 2033:3, L0320:3, L032
				H0617;2, H0488;2, L0770;2, L0776;2, L0783;2, L0663;2, L0438;2, H0519;2, L0749;2, L0757;2, L0588;2,
				L0485;2, S0011;2, H0352;2, H0624:1, H0685;1, S0444:1, S0360:1, S0408:1, H0208:1, S0046:1, H0393:1,
				S6014:1, H0370:1, H0600:1, H0587:1, L3817:1, H0244:1, L0021:1, H0599:1, H0575:1, H0706:1, S0010:1,
				H0318:1, H0581:1, L0738:1, H0545:1, H0123:1, L0471:1, H0012:1, S0022:1, L0483:1, H0644:1, H0111:1,
				H0673:1, S0036:1, H0135:1, H0038:1, H0268:1, H0413:1, H0059:1, L0475:1, H0560:1, S0438:1, S0150:1,
				H0130:1, H0633:1, L0640:1, L4747:1, L0796:1, L0667:1, L0772:1, L0641:1, L0374:1, L0764:1, L0773:1,
				L0364:1, L0389:1, L0650:1, L0775:1, L0378:1, L0655:1, L0518:1, L0664:1, S0006:1, L3824:1, L3825:1,
				H0520:1, H0684:1, H0658:1, H0672:1, S0328:1, H0539:1, L0602:1, S0152:1, H0696:1, S0406:1, H0555:1,
				H0345:1, L0747:1, L0777:1, L0752:1, S0260:1, H0445:1, H0707:1, S0434:1, S0436:1, L0597:1, L0591:1,
				L0599:1, L0601:1, H0653:1, H0542:1, H0543:1, S0042:1 and S0424:1.
29 H	HAPNY86	587261	39	AR241:9, AR268:8, AR186:8, AR176:8, AR270:7, AR197:7, AR183:7, AR175:7, AR269:7, AR254:7,
				AR221:6, AR182:6, AR274:6, AR252:6, AR204:6, AR206:6, AR181:6, AR184:6, AR267:6, AR246:6,
				AR290:6, AR201:6, AR309:6, AR266:6, AR228:5, AR198:5, AR178:5, AR207:5, AR165:5, AR163:5,
				AR161:5, AR162:5, AR171:5, AR273:5, AR164:5, AR250:5, AR061:5, AR238:5, AR166:5, AR289:5,
_		•		AR202:5, AR055:5, AR214:5, AR298:5, AR195:5, AR052:5, AR205:5, AR192:4, AR243:4, AR291:4,
				AR236:4, AR271:4, AR053:4, AR282:4, AR312:4, AR257:4, AR293:4, AR284:4, AR229:4, AR226:4,
_				AR261:4, AR296:4, AR177:4, AR216:4, AR275:4, AR185:4, AR233:4, AR193:4, AR247:4, AR264:4,
				AR237:4, AR227:4, AR235:4, AR292:4, AR245:4, AR295:4, AR239:4, AR232:3, AR230:3, AR299:3,
				AR213:3, AR300:3, AR287:3, AR174:3, AR231:3, AR194:3, AR191:3, AR212:3, AR313:3, AR262:3,
				AR223:3, AR286:3, AR255:3, AR297:3, AR288:3, AR217:3, AR033:3, AR089:3, AR294:3, AR272:3,
				AR173:3, AR060:3, AR311:3, AR285:3, AR308:3, AR234:3, AR179:3, AR203:3, AR169:3, AR190:3,
				AR172:2, AR316:2, AR256:2, AR259:2, AR199:2, AR277:2, AR200:2, AR222:2, AR189:2, AR253:2,
				AR168:2, AR188:2, AR210:2, AR265:2, AR283:2, AR240:2, AR244:2, AR224:2, AR225:2, AR104:2,

				AR039:2, AR249:2, AR218:2, AR096:2, AR219:2, AR196:2, AR258:2, AR310:2, AR180:1, AR170:1, AR314:1 H0575:7, L0756:5, S0360:3, L0779:3, L0599:3, H0624:2, H0662:2, L0663:2, H0521:2, L0759:2, L0759:3, L075
		* * * * * * * * * * * * * * * * * * * *		H0170:1, H0208:1, H0486:1, H0599:1, H0024:1, S0005:1, H0039:1, H0103:1, H0208:1, H044:1, L0744:1, L0750:1 and L0763:1, L0638:1, L0646:1, L0648:1, L0662:1, L0768:1, L0655:1, L0809:1, H0144:1, L0744:1, L0750:1 and H0506:1.
38	HAPPW30	1352278	40	AR174:24, AR235:23, AR196:23, AR177:22, AR191:19, AR175:19, AR233:19, AR288:19, AR179:18,
				AK190:17, AK203:17, AK237:17, AK185:17, AK182:17, AK185:15, AK161:15, AK162:15, AK163:15, AK163:
				AR199:14, AR286:14, AR033:14, AR165:14, ÁR260:14, AR285:14, AR294:14, AR231:14, AR164:14,
				AR258:14, AR104:14, AR061:13, AR267:13, AR293:13, AR238:13, AR166:13, AR226:13, AR189:13,
				AR232:13, AR269:13, AR291:13, AR262:12, AR173:12, AR200:12, AR240:12, AR247:12, AR293:12,
				AK230:12, AK262:11, AK2/0:11, AK22/1:11, AK22/1:11, AK289:10, AK239:9, AK274:9, AK183:9, AK268:9,
				AR237.9 AR180.9 AR229.9 AR308.8 AR266.8 AR256.8, AR201.8, AR309.7, AR290.7, AR311.7,
				AR225.7. AR193.7. AR277.7, AR242.7, AR169.7, AR263.7, AR213.6, AR264.6, AR171.6, AR272.6,
				AR039:6, AR223:6, AR170:5, AR224:5, AR210:5, AR312:5, AR053:5, AR168:5, AR096:5, AR216:5,
				AR195:5, AR219:5, AR245:5, AR218:5, AR253:5, AR214:5, AR283:5, AR222:5, AR313:4, AR246:4,
				AR172:4, AR217:4, AR212:4, AR250:4, AR215:4, AR221:3, AR205:3, AR197:3, AR243:3, AR254:3,
				AR198.2, AR271.2, AR192.1 L0748.12, S0474.5, L0777.5, L0758.5, H0424.4, H0038.4, L0752.4, L0774.3,
				L0742:3, L0779:3, L0755:3, H0616:2, L0770:2, L0764:2, L0776:2, H0539:2, L0753:2, L0599:2, H0663:1,
				H0722:1, H0728:1, H0208:1, S0045:1, L3388:1, L3484:1, L3491:1, T0040:1, H0575:1, S0010:1, S0049:1,
				H0052:1, H0545:1, H0009:1, H0103:1, H0012:1, L0163:1, H0266:1, H0188:1, H0292:1, H0213:1, H0169:1,
				H0388:1, H0708:1, H0135:1, H0412:1, T0041:1, T0042:1, H0538:1, L0769:1, L0638:1, L0772:1, L0767:1,
				L0775:1, L0809:1, L0665:1, L2263:1, H0547:1, H0672:1, H0521:1, S0392:1, S0027:1, L0747:1, L0786:1,
	UV DDDW30	684272	613	LU(31:1, LU(37:1, LU(39:1, LU(39:1) and Indose:1.
31	HAPOT22	587601	4	AR196:13, AR161:12, AR162:12, AR163:12, AR173:10, AR180:9, AR257:9, AR258:9, AR229:9, AR247:9,
;	1			AR199:8, AR191:8, AR262:8, AR269:8, AR181:8, AR293:8, AR165:8, AR178:8, AR236:8, AR164:8,
				AR240:7, AR166:7, AR264:7, AR235:7, AR175:7, AR183:7, AR252:7, AR233:7, AR174:7, AR177:7,
				AR182:6, AR296:6, AR228:6, AR179:6, AR300:6, AR261:6, AR231:6, AR238:6, AR189:6, AR188:6,
				AR313:6, AR234:6, AR294:6, AR287:6, AR237:6, AR286:6, AR263:6, AR200:6, AR203:6, AR185:5,
				AR226:5, AR255:5, AR311:5, AR312:5, AR275:5, AR270:5, AR260:5, AR214:5, AR267:5, AR285:5,
				AR297:5, AR176:5, AR288:5, AR089:5, AR254:5, AR274:5, AR291:5, AR290:5, AR268:5, AR195:5,
				AR230:5, AR239:4, AR295:4, AR242:4, AR190:4, AR308:4, AR193:4, AR03:4, AR217:4, ARC01:4,

AR272:4, AR271:4, AR096:4, AR207:4, AR215:4, AR192:4, AR197:3, AR245:3, AR218:3, AR309:3, AR299:3, AR060:3, AR266:3, AR170:3, AR213:3, AR168:3, AR277:3, AR216:3, AR256:3, AR219:3, AR282:3, AR282:3, AR171:3, AR225:3, AR216:3, AR061:2, AR223:2, AR211:2, AR224:2, AR169:2, AR210:2, AR221:2, AR289:2, AR055:2, AR104:2, AR205:2, AR039:1, AR053:1, AR250:1		Γ.		AR055:34, AR104:32, AR283:31, AR089:31, AR219:23, AR096:22, AR218:22, AR060:21, AK313:20, AR316:15, AR185:14, AR039:13, AR299:12, AR182:10, AR282:10, AR294:10, AR267:9, AR240:7, AR257:7, AR293:6, AR233:6, AR300:5, AR164:5, AR258:5, AR221:5, AR260:5, AR170:5, AR288:5, AR277:5, AR175:4, AR285:4, AR293:6, AR262:4, AR259:4, AR253:4, AR262:4, AR259:4, AR259:4, AR269:3, AR260:5, AR175:4, AR285:4, AR293:4, AR262:4, AR255:4, AR250:3, AR270:3, AR170:3, AR163:3, AR268:3, AR245:3, AR162:3, AR162:3, AR264:3, AR252:2, AR290:2, AR270:3, AR171:2, AR289:2, AR293:2, AR290:2, AR290:1, AR180:3, AR290:1, AR180:1, AR290:1, AR180:1, AR290:1, AR170:1, AR290:1, AR170:1, AR290:1, AR390:1, H0043:1, H0041:1, H0049:1, H0041:1, H0399:1, H0052:1, H0052:1, H0644:1, H0048:1, H0648:1, H0651:1, L0793:1, L0793:1, L0666:1, H0547:1, S0126:1, H0648:1, H0539:1, S0027:1, L0749:1, L0755:1, H0668:1, H0668	
	. 42	53 614	43	76 44	
	1300782	381953	603947	1352276	
	HASAV70	HASAV70	HASCG84	HATAC53	
	32		33	2	

35	HATBR65	635514	45	AR213:46, AR173:29, AR258:29, AR096:29, AR229:29, AR300:26, AR218:26, AR240:26, AR247:26, AR214:26, AR196:24, AR223:23, AR175:23, AR257:22, AR174:22, AR178:22, AR165:21, AR287:21, AR181:21, AR089:21, AR293:20, AR163:20, AR264:20, AR164:20, AR333:20, AR309:20, AR216:19, AR281:19, AR262:19, AR185:19, AR269:19, AR180:18, AR312:18, AR299:20, AR216:19, AR290:18, AR299:19, AR290:11, AR291:10, AR290:11, AR291:11, AR291:16, AR291:16, AR291:16, AR291:10, AR291:11, AR280:13, AR260:13, AR260:13, AR260:13, AR260:13, AR260:13, AR260:13, AR260:13, AR291:11, AR291:
36	HATCB92	603948	46	AR242:8, AR245:5, AR170:5, AR161:5, AR162:5, AR163:5, AR309:5, AR204:4, AR205:4, AR053:4, AR275:4, AR165:4, AR161:5, AR162:5, AR165:4, AR170:3, AR277:4, AR193:4, AR271:4, AR196:3, AR282:3, AR270:3, AR273:3, AR235:3, AR264:2, AR197:3, AR297:3, AR207:3, AR207:3, AR207:3, AR207:3, AR207:3, AR207:3, AR207:3, AR207:2, AR207:1, AR2
37	HATCP77	748244	47	AR197:21, AR195:21, AR193:18, AR246:15, AR245:12, AR243:11, AR201:11, AR207:8, AR101:1, AR244:1, AR197:21, AR195:21, AR186:7, AR186:6, AR202:6, AR251:6, AR164:6, AR173:6, AR176:6, AR162:7, AR186:6, AR171:5, AR182:5, AR241:5, AR198:5, AR276:5, AR268:5, AR274:5, AR273:4, AR309:4, AR250:4, AR235:4, AR310:4, AR242:4, AR206:4, AR183:4, AR312:4, AR192:4, AR256:4, AR271:4, AR178:4, AR181:3, AR033:3, AR252:3, AR282:3, AR267:3, AR275:3, AR204:3, AR180:3, AR213:3, AR060:3, AR308:3, AR240:2, AR213:2, AR240:2, AR271:2, AR2

				AR039:2, AR300:2, AR253:2, AR264:2, AR233:2, AR257:2, AR096:2, AR231:1, AR238:1, AR294:1,
		···		AR283:1, AR286:1, L0805:4, L0774:3, L0776:3, H0013:1, H0156:1, H0673:1, S0440:1, L0794:1, L0803:1,
				H0690:1 and L0779:1.
38	HATDF29	845965	8	AR290:4, AR221:3, AR170:3, AR253:3, AR169:3, AR213:3, AR170:3, AR240:3, AR224:2, AR176:2, AR260:3, AR270:3, AR270:3, AR380:2, AR171:2, AR240:2, AR270:3, AR370:3, AR3
				AR232.2, AR277.2, AR181.1, AR161.1, AR163.1, AR237.1, AR264.1, AR282.1, AR217.1, AR291.1,
				AP777:1 AR177:1 AR268:1 AR104:1 AR296:1, AR096:1, AR257:1, AR283:1 S0132:3, H0575:3,
				H0271;3, H0038;3, S0142;3, H0521;3, L0758;3, L0596;3, S0344;2, H0661;1, H0402;1, S0360;1, H0393;1,
				H0618:1, H0253:1, H0581:1, H0179:1, T0023:1, T0041:1, H0494:1, S0002:1, L0763:1, L0775:1, S0374:1,
				H0555:1, L0751:1 and L0589:1.
39	HATDM46	974065	65	ARI65:9, ARI64:8, ARI66:8, AR313:8, ARI62:7, AR161:7, AR163:7, AR089:7, AR192:9, AR173:9,
				AR275:6, AR282:5, ARU96:5, AR312:5, AR305:3, AR309:4, AR135:4, AR175:4, AR170:4, AR275:6, AR275:4, AR311:3
				AK264:4, AK240:4, AK185:4, AK249:4, AKZ15:4, AKZ10:4, AK200:4, AK240:4, AK185:4:4, AK240:4, A
				AR195:3, AR242:3, AR225:3, AR175:3, AR277:3, AR252:3, AR300:3, AR104:3, AR283:3, AR173:3,
				AR247:3, AR177:2, AR299:2, AR221:2, AR316:2, AR055:2, AR250:2, AR201:2, AR269:2, AR033:2,
				AR270:2, AR180:2, AR238:2, AR207:2, AR272:2, AR234:2, AR174:2, AR181:2, AR271:2, AR291:2,
				AR171:1, AR236:1, AR229:1, AR268:1, AR179:1, AR257:1, AR224:1, AR188:1, AR233:1, AR210:1,
				AR205:1, AR253:1, AR293:1, AR196:1 L0731:6, H0156:3, H0424:3, L0747:3, H0255:2, H0580:2, H0081:2,
				L0755:2, H0170:1, H0341:1, H0483:1, H0402:1, S0045:1, S0046:1, H0333:1, H0331:1, S0280:1, H0309:1,
				H0231:1, H0546:1, S0051:1, S6028:1, H0494:1, H0561:1, S0150:1, S0210:1, L0598:1, H0521:1, H0436:1,
				S0027:1, L0742:1, L0777:1, L0759:1, H0445:1 and S0194:1.
	HATDM46	859456	919	
	HATDM46	898321	617	
	HATDM46	889305	618	
	HATDM46	795099	619	
	HATDM46	794272	620	
9	HATEE46	565618	20	AR296:15, AR266:6, AR176:6, AR291:6, AR289:6, AR255:5, AR257:5, AR183:5, AR182:5, AR269:5,
			_	AR252.4, AR253:4, AR290:4, AR294:4, AR309:4, AR297:4, AR178:3, AK060:3, AR053:3, AK221:3,
				[AR175:3, AR288:3, AR270:3, AR181:3, AR177:3, AR256:3, AR260:3, AR261:3, AR286:3,
				AR268:3, AR223:3, AR287:3, AR272:3, AR162:3, AR224:3, AR238:3, AR262:3, AR165:3, AR173:3,
				AR161:3, AR295:3, AR179:3, AR163:3, AR277:3, AR164:3, AR217:3, AR166:2, AR299:2, AR258:2,
				AR205:2, AR236:2, AR243:2, AR228:2, AR226:2, AR229:2, AR168:2, AR285:2, AR191:2, AK283:2,

				AR231:2, AR300:2, AR174:2, AR172:2, AR204:2, AR201:2, AR104:2, AR214:2, AR239:2, AR233:2,
				AR089;2, AR200;2, AR246;2, AR316;2, AR190;2, AR237;2, AR240;2, AR271;2, AR312:1, AR264:1,
				AR189:1, AR096:1, AR213:1, AR196:1, AR215:1, AR199:1, AR218:1, AR170:1, AR203:1, AR313:1,
				AR033:1, AR247:1, AR039:1, AR180:1, AR242:1, AR282:1, AR311:1, AR235:1, AR185:1, AR061:1,
				AR211:1 L0731:3, L0662:2, S0212:1, S0418:1, S0358:1, H0734:1, H0411:1, H0486:1, H0156:1, H0266:1,
				S0022:1, H0551:1, T0041:1, L0640:1, L0641:1, L0804:1, L0805:1, L0776:1, L0659:1, L0517:1, L0790:1,
	_			H0520:1, S0126:1, S3014:1, L0740:1, L0747:1, L0750:1, L0756:1, L0752:1, L0759:1, L0599:1 and S0026:1.
41	HBAF133	625916	51	AR104:19, AR311:14, AR096:12, AR285:12, AR291:12, AR295:11, AR185:11, AR161:11, AR162:11,
				AR163:11, AR089:11, AR190:10, AR275:10, AR316:10, AR312:9, AR189:9, AR274:9, AR308:9, AR219:9,
				AR196:9, AR297:9, AR262:9, AR055:9, AR165:9, AR287:9, AR033:8, AR164:8, AR309:8, AR174:8,
				AR313:8, AR255:8, AR240:8, AR283:8, AR263:8, AR218:8, AR264:8, AR288:8, AR235:8, AR252:8,
				AR210:8, AR236:8, AR191:7, AR166:7, AR299:7, AR200:7, AR177:7, AR170:7, AR261:7, AR168:7,
				AR258:7, AR212:7, AR221:7, AR293:6, AR224:6, AR188:6, AR296:6, AR282:6, AR247:6, AR169:6,
				AR175:6, AR286:6, AR272:6, AR223:6, AR277:6, AR178:6, AR060:6, AR172:6, AR183:6, AR171:6,
				AR289:6, AR039:5, AR214:5, AR179:5, AR222:5, AR294:5, AR213:5, AR216:5, AR290:5, AR215:5,
				AR269:5, AR180:5, AR173:5, AR176:5, AR211:5, AR270:5, AR257:5, AR300:5, AR181:5, AR225:4,
				AR217:4, AR268:4, AR199:4, AR207:4, AR053:4, AR238:4, AR246:4, AR182:4, AR260:3, AR271:3,
				AR231:3, AR203:3, AR256:3, AR226:3, AR234:3, AR205:3, AR193:3, AR195:3, AR242:3, AR237:3,
				AR232:3, AR267:3, AR266:3, AR245:3, AR243:3, AR201:2, AR192:2, AR229:2, AR228:2, AR239:2,
				AR230:2, AR061:2, AR197:2, AR250:2, AR227:2, AR233:2, AR254:1, AR253:1 L0770:6, L0748:6,
				L0779:5, L0731:5, L0766:4, L0659:4, L0752:4, L0769:3, L0664:3, L0439:3, L0747:3, L0757:3, L0005:2,
				H0427:2, L0738:2, L0157:2, T0010:2, T0006:2, L0499:2, L0775:2, L0806:2, L0809:2, L0438:2, H0651:2,
				L0751:2, L0756:2, L0777:2, L0755:2, L0596:2, H0650:1, S0356:1, S0360:1, H0741:1, H0411:1, H0455:1,
				H0574:1, H0156:1, H0581:1, H0309:1, H0544:1, H0023:1, H0071:1, H0083:1, T0004:1, T0042:1, L0520:1,
				$\lfloor 10761:1, \lfloor 10772:1, \lfloor 10771:1, \lfloor 10773:1, \lfloor 10648:1, \lfloor 10662:1, \lfloor 10768:1, \lfloor 10774:1, \lfloor 10375:1, \lfloor 10784:1, \lfloor 10512:1, \rfloor ight]$
			_	L0783:1, L0666:1, L0665:1, L0565:1, H0659:1, S0378:1, H0696:1, S0406:1, H0436:1, L0740:1, L0749:1,
			_	L0758:1, L0759:1, S0260:1, H0444:1, H0445:1, L0589:1, L0591:1, L0581:1, L0595:1, H0423:1 and H0422:1.
42	HBAFV19	843036	52	AR196:41, AR173:39, AR164:35, AR166:32, AR165:31, AR262:30, AR162:25, AR161:25, AR163:24,
!				AR174:24, AR178:23, AR236:22, AR199:22, AR264:21, AR257:21, AR181:21, AR313:20, AR212:20,
				AR242:20, AR180:20, AR258:19, AR200:18, AR308:18, AR261:18, AR230:18, AR175:17, AR287:17,
				AR234:17, AR191:16, AR235:16, AR247:16, AR240:16, AR297:16, AR229:15, AR188:15, AR260:15,
	•			AR203:15, AR179:15, AR189:15, AR207:15, AR053:15, AR177:14, AR183:13, AR255:13, AR238:13,
				AR288:13, AR192:12, AR296:12, AR300:12, AR233:12, AR214:11, AR263:11, AR223:11, AR311:11,
				AR281:11, AR169:11, AR224:11, AR193:11, AR213:10, AR228:10, AR222:10, AR260:10, AR211:10,

218:10, R270:9, C210:8, C316:7, C245:6, C232:5, C265:4, C298:2, 42:1, H0393:1, 1, L0526:1,	R288:1, 0410:1 and	S0424:1.	1000	AR236:4, AR242:3, AR224:3, AR224:2, AR214:2, AR313:1, 1:1. AR313:1, AR243:23, AR308:16, AR308:16, AR308:15, AR308:15, AR308:12,
AR275:10, AR269:10, AR185:10, AR314:10, AR193:10, AR239:10, AR089:10, AR182:10, AR2218:10, AR293:10, AR168:9, AR312:9, AR285:9, AR176:9, AR217:9, AR299:9, AR226:9, AR270:9, AR221:9, AR295:9, AR212:9, AR231:8, AR172:8, AR290:8, AR096:8, AR268:7, AR267:7, AR316:7, AR237:7, AR277:7, AR252:7, AR291:7, AR216:7, AR282:7, AR290:7, AR201:6, AR198:6, AR245:6, AR225:6, AR272:6, AR272:6, AR273:4, AR205:4, AR205:4, AR205:4, AR205:4, AR205:4, AR205:3, AR204:3, AR204:3, AR204:3, AR204:3, AR204:3, AR206:2, AR194:1, AR259:1, L0803:2, L0665:2, H0716:1, S0360:1, H0742:1, H0393:1, L0791:1, L0663:1, L0799:1, L0757:1 and H0506:1, S036:1, S0340:1, L0764:1, L0663:1, L0799:1, L0757:1 and H0506:1, L0791:1, L0663:1, L0799:1, L0797:1 and H0506:1, L0791:1, L0663:1, L0794:1, L0794:1, L0794:1, L0793:1, L0791:1, L0794:1, L0794:1, L0797:1 and H0506:1, L0791:1, L0663:1, L0794:1, L0797:1 and H0506:1, L0791:1, L0663:1, L0794:1, L0794:1, L0797:1 and H0506:1, L0797:1, L0663:1, L0794:1, L0794:1, L0797:1 and H0506:1, L0797:1, L0797:1, L0663:1, L0797:1, L0797:1, L0797:1, L0663:1, L0797:1, L0797:1, L0663:1, L0797:1, L0663:1, L0797:1, L0663:1, L0797:1, L0797:1, L0663:1, L0797:1, L0797:1, L0663:1, L0797:1,	AR180:4, AR169:4, AR170:3, AR213:3, AR235:3, AR198:2, AR252:2, AR171:2, AR173:2, AR172:2, AR180:2, AR180:2, AR280:2, AR280:2, AR280:2, AR280:2, AR280:2, AR280:2, AR280:1, AR280:1, AR280:1, AR277:1, AR177:1, AR266:1, AR193:1, AR238:1, AR294:1, AR182:1 L0752:3, H0410:1 and H0658:1.	AR277:11, AR283:8, AR219:6, AR104:6, AR282:5, AR316:5, AR240:5, AR055:5, AR039:5, AR089:4, AR185:4, AR313:4, AR300:3, AR096:3, AR218:3, AR299:3, AR060:2 H0663:2, S6028:1 and S0424:1	, , , , , , , , , ,	AR253:7, AR161:5, AR162:5, AR197:5, AR193:5, AR207:5, AR176:5, AR271:4, AK236:4, AR229:4, AR264:4, AR053:4, AR204:4, AR178:4, AR309:4, AR235:4, AR255:3, AR201:3, AR242:3, AR229:4, AR264:4, AR055:3, AR204:4, AR178:4, AR309:4, AR235:4, AR225:3, AR164:3, AR242:3, AR217:3, AR060:3, AR166:3, AR243:3, AR269:3, AR269:3, AR269:3, AR277:2, AR239:2, AR277:2, AR269:3, AR200:2, AR200:1, AR200:10,
239:10, AR089: AR294:8, AR2 AR296:8, AR2 AR309:7, AR2 AR204:4, AR2 AR104:3, AR0 L0665:2, H071 440:1, L0764:1,	, AR252:2, AR1 , AR210:1, AR2 , AR294:1, AR1	5, AR240:5, AR , AR060:2 H06		AR253:7, AR161:5, AR162:5, AR197:5, AR163:5, AR193:5, AR207:5, AR176:5, AR271:4, AR225:4, AR264:4, AR053:4, AR204:4, AR178:4, AR309:4, AR255:4, AR225:3, AR201:3, AR229:4, AR264:4, AR053:4, AR204:4, AR182:3, AR204:3, AR266:3, AR282:3, AR266:3, AR271:3, AR266:3, AR266:3, AR271:3, AR247:3, AR061:3, AR266:3, AR269:3, AR268:3, AR266:3, AR273:2, AR266:3, AR273:2, AR266:3, AR273:2, AR266:3, AR266:3, AR266:3, AR273:2, AR266:3, AR266:3, AR285:2, AR285:2, AR285:2, AR285:2, AR273:2, AR285:2, AR285:2, AR273:2, AR285:2, AR285:2, AR285:2, AR173:2, AR287:1, AR285:2, AR285:2, AR285:2, AR175:2, AR285:1, AR286:1, AR197:16, AR286:16, AR286:15, AR286:16, AR286:15, AR286:15, AR197:16, AR299:16, AR286:15, AR286:15, AR197:16, AR299:16, AR286:15, AR286:13, AR286:13, AR286:12, AR196:13, AR286:13, AR286:12, AR196:12, AR196:12, AR286:13, AR286:13, AR286:12, AR196:12, AR286:12, AR286:13, AR286:12, AR196:12, AR286:12, AR286:13, AR286:12, AR196:12, AR286:12, AR286:13, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:13, AR286:12, AR286:12, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:12, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:13, AR286:12, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:12, AR286:12, AR286:13, AR286:12, AR286:13, AR286:12, AR286:12, AR286:12, AR286:13, AR286:13, AR286:12, AR286:13, AR286:13
, AR193:10, AR R176:9, AR217:5 170:9, AR219:8, 172:8, AR290:8, 216:7, AR282:7, 184:5, AR060:5, 205:4, AR310:4, 186:3, AR055:3, 259:1 L0803:2, 7:1, S003:1, S0	235:3, AR198:2 283:2, AR285:1 193:1, AR238:1	R282:5, AR316: 218:3, AR299:3		AR253:7, AR161:5, AR162:5, AR197:5, AR193:5, AR2907:5, AR176:5, AR271:4, AR236:4, AR229:4, AR264:4, AR053:4, AR204:4, AR178:4, AR309:4, AR235:4, AR225:3, AR201:3, AR201:3, AR229:4, AR264:4, AR053:4, AR204:4, AR178:4, AR309:4, AR235:4, AR225:3, AR164:3, AR201:3, AR201:2, AR201:1, AR
AR275:10, AR269:10, AR185:10, AR314:10, AR19 AR293:10, AR295:9, AR312:9, AR315:9, AR176:9 AR221:9, AR295:9, AR215:9, AR315:9, AR170:9, AR286:8, AR274:8, AR197:8, AR231:8, AR172:8, AR237:7, AR277:7, AR252:7, AR291:7, AR216:7, AR225:6, AR272:6, AR256:6, AR202:6, AR184:5, AR246:5, AR289:4, AR271:4, AR273:4, AR205:4, AR206:2, AR293:3, AR249:3, AR194:1, AR259:1 H0411:1, S0278:1, T0071:1, H0644:1, H0617:1, SC	3, AR213:3, AR 2, AR295:2, AR 1, AR266:1, AR	3, AR104:6, A 3, AR096:3, AR		5, AR197:5, AR 4, AR204:4, AR 3, AR228:3, AR 2, AR223:2, AR 2, AR290:2, AR 2, AR290:2, AR 11, AR257:1, AR 11, AR257:1, AR 14:27, AR223:2, AR 14:27, AR253:2, AR168:2, AR 17:18, AR265:11 99:16, AR265:11
R269:10,-AR18 R168:9, AR315:3 (295:9, AR215:3 (277:7, AR252:7 (272:6, AR256:4 (289:4, AR271:4 (289:3, AR249:7 (292:2, AR283:7 (291:1, L0749:11, 563:1, L0749:11,	8169:4, AR170: 8089:2, AR309: 8277:1, AR177:	.R283:8, AR219 R313:4, AR300:		R161:5, AR162: R264:4, AR053: R060:3, AR165: R089:3, AR166: R240:2, AR237: R293:2, AR173: R175:2, AR173: R296:1, AR262: R255:1, AR203: RR263:23, AR173: RR263:23, AR173: RR263:23, AR173: RR263:23, AR173: RR263:23, AR173: RR263:23, AR173: RR164:15, AR208: RR164:15, AR208: RR164:15, AR208:
AR275:10, A AR229:10, A AR221:9, AR AR286:8, AF AR237:7, AF AR246:5, AF AR246:5, AF AR052:3, AF H0411:1, SØ L0791:1, LO	AR180:4, AF AR230:2, AF AR217:1, AF H0658:1.	AR277:11, A AR185:4, AF		AR253:7, AI AR229:4, AI AR182:3, AI AR217:3, AI AR269:3, AI AR269:3, AI AR316:2, AI AR282:2, AI AR291:1, AI AR291:1, AI AR27:45, A AR192:23, A AR170:16, A
	53	54	621	55
	553553	1352403	1045580	420036 848016
	HBAMB34	HBCPB32	HBCPB32	HBHAD12
	43	44		45

				AR297:12, AR163:12, AR039:12, AR271:11, AR236:11, AR060:11, AR289:11, AR296:11, AR286:11,
				AR177:11, AR300:10, AR287:10, AR291:10, AR210:9, AR185:9, AR096:9, AK204:9, AK293:9, AK199:9, AK199:9, AK17:11 AR211:9, AR266:9, AR283:8, AR055:8, AR313:8, AR181:8, AR200:8, AR174:8, AR250:8, AR104:8,
				AR176:7, AR294:7, AR247:7, AR272:7, AR219:7, AR258:7, AR188:7, AR274:7, AR189:7, AR191:7,
	_		-	AR218:7, AR262:7, AR275:7, AR257:7, AR269:7, AR183:7, AR290:7, AR061:6, AK268:6, AK180:9,
				AK2/0:6, AK252:6, AK259:6, AK1/3:6, AK234:0, AK250:6, AK235:6, AK235:6, AK190:5, AK229:5, AK227:5, AR227:5, AR27:5, AR227:5, AR27:5, AR27:5, AR27:5, AR27:5, AR27:5, AR27:5, AR27:5, AR
				AR260:5, AR253:5, AR182:5, AR233:5, AR179:5, AR228:4 S0330:131, S0328:64, H0593:15, S0446:14,
				S0456:13, L2640:6, S0310:6, S0464:3, L3684:2, H0708:2, S0352:2, S0432:2, L1057:1, L3421:1, L3118:1,
				L3503:1, L3506:1, L2647:1, L3511:1, L3518:1, L3744:1, L0022:1, H0042:1, H0617:1, L5569:1, L0806:1, L0791:1 and S0436:1.
	HBHMA23	699815	622	
47	HBIBW67	553678	57	AR313:35, AR039:25, AR165:18, AR096:18, AR164:17, AR166:17, AR089:15, AR299:12, AR300:12,
				AR173:12, AR247:10, AR316:9, AR185:9, AR104:9, AR277:9, AR269:8, AR060:3, AR312:8, AR257:9,
				AR242:8, AR183:8, AR175:8, AR240:7, AR219:7, AR229:7, AR191:7, AR196:1, AK282:1, AK288:1,
				AR262:7, AR309:6, AR182:6, AR179:6, AR258:6, AR218:6, AR180:6, AR199:6, AR270:6, AR234:5,
				AR181:5, AR213:5, AR174:5, AR193:5, AR233:5, AR226:5, AR053:5, AR178:5, AR268:5, AR200:5,
				AR250:5, AR308:5, AR055:5, AR204:5, AR255:5, AR254:5, AR163:5, AR189:5, AR176:5, AR236:4,
				JAR293:4, AR237:4, AR161:4, AR201:4, AR197:4, AR283:4, AR231:4, AR162:4, AR266:4, AR177:4,
				AR228:4, AR198:4, AR192:4, AR224:4, AR207:4, AR243:3, AR203:3, AR271:3, AR267:3, AR290:3,
				AR188:3, AR221:3, AR297:3, AR235:3, AR287:3, AR190:3, AR285:3, AR169:3, AR212:3, AR294:3,
				AR239:3, AR261:3, AR033:3, AR205:3, AR230:3, AR291:3, AR296:3, AR260:3, AR168:3, AR246:3,
				JAR227:2, AR225:2, AR295:2, AR232:2, AR286:2, AR288:2, AR264:2, AR061:2, AR195:2, AR274:2,
				AR256:2, AR272:2, AR172:2, AR275:2, AR217:2, AR211:2, AR171:1, AR222:1, AR289:1, AR216:1
				H0394:2, S0376:1, S0049:1, L0794:1 and T0068:1.
48	HBIMB51	963208	28	AR225:5, AR162:5, AR161:5, AR223:5, AR224:5, AR170:5, AR180:5, AR176:4, AR183:4, AR214:4,
!				AR163:4, AR165:4, AR222:4, AR164:4, AR207:4, AR166:4, AR228:4, AR230:3, AR291:3, AR169:3,
	-			AR187:3, AR192:3, AR269:3, AR239:3, AR2164:3, AR215:3, AR238:3, AR178:3, AR282:3, AR272:3,
				AR201:3, AR190:3, AR250:3, AR173:3, AR297:3, AR234:3, AR267:3, AR257:3, AR197:3, AR168:3,
				JAR288:3, AR181:3, AR263:3, AR245:3, AR195:2, AR188:2, AR193:2, AR262:2, AR179:2, AR182:2,
				AR268:2, AR216:2, AR172:2, AR255:2, AR236:2, AR231:2, AR253:2, AR247:2, AR296:2, AR277:2,
				AR266:2, AR229:2, AR290:2, AR174:2, AR295:2, AR233:2, AR289:2, AR270:2, AR312:2, AR227:2,
				AR203:2, AR089:2, AR240:2, AR175:2, AR212:2, AR294:2, AR237:2, AR293:2, AR274:2, AR254:2,
				AR226:2, AR171:2, AR189:2, AR285:2, AR309:2, AR313:2, AR271:2, AK232:2, AK286:2, AK001:2,

				AR033:3, AR255:3, AR290:3, AR211:3, AR283:3, AR260:3, AR277:3, AR267:3, AR233:3, AR039:3,
				AR198.3, AR231:3, AR238:3, AR234.3, AR190:3, AR237:3, AR289:3, AR226:3, AR204:2, AR230:2,
				AR256:2, AR235:2, AR239:2, AR055:2, AR228:2, AR227:2, AR232:1, AR061:1, AR242:1 H0255:2,
				H0318:2, H0341:1, L0519:1, S0053:1 and L0748:1.
51	HBJID05	1130660	61	AR192:7, AR161:4, AR162:4, AR163:4, AR163:4, AR165:4, AR308:4, AR310:4, AR312:4, AR164:4,
				AR282:4, AR166:4, AR195:3, AR053:3, AR245:3, AR250:3, AR1/0:3, AR215:3, AR204:3, AR311:3,
				AR176:3, AR201:2, AR274:2, AR275:2, AR246:2, AR197:2, AR213:2, AR313:2, AR287:2, AR212:2,
				AR172:2, AR272:2, AR225:2, AR205:2, AR296:2, AR243:2, AR033:2, AR267:2, AR089:2, AR233:2,
	_			AR299:2, AR239:2, AR173:2, AR289:2, AR257:2, AR291:2, AR182:2, AR300:1, AR185:1, AR177:1,
				AR262:1, AR293:1, AR169:1, AR247:1, AR267:1, AR060:1, AR268:1, AR061:1, AR175:1, AR191:1, AR211:1, AR297:1, H0318:1
	HBJID05	544980	979	
52	HBJIY92	778065	62	AR250:8, AR180:6, AR181:6, AR183:6, AR178:5, AR239:5, AR213:5, AR177:5, AR268:4, AR174:4,
				AR053:4, AR269:4, AR270:4, AR179:4, AR161:3, AR252:3, AR182:3, AR169:3, AR190:3, AR163:3,
				[AR162:3, AR235:3, AR175:3, AR165:3, AR164:3, AR264:3, AR267:3, AR212:3, AR166:3, AR192:3,
				AR231:3, AR226:3, AR170:2, AR096:2, AR290:2, AR196:2, AR236:2, AR193:2, AR228:2, AR240:2,
				AR263.2, AR189.2, AR229.2, AR195.2, AR285.2, AR201.2, AR296.2, AR200.2, AR295:2, AR291.2,
				AR203:2, AR272:2, AR275:2, AR216:2, AR274:2, AR191:2, AR222:2, AR246:2, AR293:2, AR297:2,
				AR266:2, AR300:2, AR221:2, AR316:2, AR168:2, AR313:2, AR243:1, AR188:1, AR308:1, AR288:1,
				AR282:1, AR286:1, AR233:1, AR261:1, AR247:1, AR237:1, AR287:1, AR257:1, AR199:1, AR258:1,
				AR172:1, AR309:1, AR089:1, AR289:1, AR312:1, AR271:1, AR262:1, AR205:1 S0422:6, L0766:5,
				L0740:5, L0666:4, L0770:3, H0521:3, H0656:2, H0587:2, H0590:2, H0545:2, H0412:2, L0662:2, L0804:2,
				L0655:2, L0754:2, L0777:2, L0588:2, L0599:2, S0040:1, H0717:1, H0676:1, H0580:1, H0369:1, H0392:1,
				H0586:1, H0486:1, H0575:1, S0010:1, H0318:1, H0581:1, H0563:1, H0081:1, S6028:1, H0266:1, H0031:1,
				H0169:1, H0163:1, H0591:1, H0268:1, H0413:1, H0714:1, H0509:1, H0641:1, S0002:1, L0598:1, L0772:1,
				L0803:1, L0806:1, L0790:1, L0793:1, L0664:1, H0547:1, S0380:1, H0522:1, H0696:1, S0027:1, L0747:1,
				L0749:1, L0779:1, L0755:1, L0759:1, H0667:1, H0543:1 and H0677:1.
53	HBJJU28	561723	63	AR161:16, AR162:16, AR163:16, AR242:12, AR313:12, AR264:9, AR247:9, AR233:8, AR238:8, AR165:8,
				AR177:8, AR193:8, AR269:8, AR164:8, AR240:8, AR270:7, AR166:7, AR198:7, AR268:7, AR229:7,
				[AR300:7, AR176:7, AR180:7, AR174:7, AR236:6, AR228:6, AR234:6, AR201:6, AR226:6, AR213:6,
				AR089:6, AR237:6, AR275:6, AR179:6, AR181:6, AR257:6, AR183:6, AR053:6, AR197:6, AR178:6,
				AR204:6, AR182:6, AR262:6, AR245:6, AR274:6, AR299:5, AR231:5, AR096:5, AR312:5, AR239:5,
				AR191:5, AR266:5, AR212:5, AR293:5, AR309:5, AR271:5, AR207:5, AR173:5, AR263:5, AR267:5,
				AR189:5, AR192:5, AR291:5, AR287:4, AR185:4, AR1252:4, AR175:4, AR259::4, AR253:3, AR272:4,

				AR190:4, AR286:4, AR230:4, AR296:4, AR285:4, AR288:4, AR196:4, AR261:4, AR246:4, AR061:4, AR235:4, AR289:3, AR195:3, AR282:3, AR311:3, AR294:3, AR277:3, AR227:3, AR288:3, AR199:3, AR203:3, AR206:3, AR200:3, AR172:3, AR316:3, AR243:3, AR033:3, AR255:3, AR308:3, AR203:3,
				AR188:3, AR225:3, AR039:3, AR295:3, AR297:3, AR250:3, AR060:3, AR216:3, AR168:2, AR104:2, AR283:2, AR055:2, AR222:1, AR171:1, AR217:1, AR254:1, AR214:1, AR260:1 H0318:1 and S0386:1.
54	HBJLC01	638410	49	AR313:30, AR196:18, AR162:17, AR165:17, AR161:17, AR229:17, AR163:17, AR096:16, AR299:16, AR164:15, AR173:15, AR089:15, AR240:15, AR166:15, AR242:15, AR175:15, AR300:15, AR233:14, AR166:15, AR242:13, AR175:13, AR173:13, AR173:
				AR247:14, AR179:13, AR178:13, AR230:13, AR230:13, AR183:13, AR180:13, AR230:13, AR286:12, AR288:12, AR286:12, AR288:12, AR189:12, AR181:12, AR185:12, AR288:13, AR288:
				ARI82:11, AR269:11, AR262:11, AR192:11, AR312:11, AR216:11, AR296:10, AR204:10, AR208:10, AR201:10, AR201:10, AR275:10, AR278:10, AR278:10, AR278:10, AR278:10, AR278:10, AR278:10, AR278:10, AR278:10, AR378:10, AR378:
				AR191:10, AR265:10, AR207:3, AR200:3, AR290:8, AR207:8, AR309:8, AR282:8, AR287:8, AR189:8,
				AR268:8, AR253:8, AR288:8, AR255:8, AR198:8, AR239:8, AR039:7, AR212:7, AR188:7, AR033:7,
				AR274:7, AR195:7, AR277:7, AR254:7, AR219:7, AR104:6, AR308:6, AR2/1:6, AK109:0, AK2/2:0,
				AR283:5, AR225:5, AR232:5, AR260:5, AR207:5, AR217:5, AR243:5, AR235:5, AR172:5, AR168:5,
				AR211:4, AR214:4, AR171:4, AR205:4, AR222:4, AR224:4, AR216:4, AR246:3, AR311:3, AR210:3,
				AR223:3 H0318:1
55	HBJLF01	732111	65	AR060:20, AR213:13, AR053:11, AR052:11, AR249:9, AR248:9, AR251:8, AR246:8, AR282:7, AR238:7,
				AR061:6, AR253:6, AR182:6, AR186:5, AR273:5, AR204:5, AR192:5, AR309:5, AR183:5, AR055:5,
				AR316:5, AR104:5, AR234:5, AR233:5, AR313:5, AR312:5, AR090:5, AR241:4, AR241:4, AR247:4, AR2
				AR2/1:4, AR035:4, AR198:4, AR209:3, AR283:3, AR202:3, AR205:3, AR226:3, AR226:3,
•				AR299:3, AR243:3, AR185:3, AR240:3, AR294:3, AR293:3, AR089:3, AR039:3, AR295:3, AR177:3,
				AR271:3, AR184:3, AR231:3, AR286:3, AR175:3, AR219:2, AR256:2, AR289:2, AR258:2, AR292:2,
			_	AR284:2, AR266:2, AR290:2, AR218:2, AR285:2, AR298:2, AR296:2, AR244:2, AR259:2, AR200:2
				S0474:31, H0556:3, H0012:3, H0521:3, L0777:3, H0638:2, S0344:2, L0769:2, L0760:2, L0803:2, L0774:2,
				L0375;2, L0809;2, L0748;2, L0745;2, L0747;2, L0756;2, L0779;2, L0731;2, H0484;1, S0420;1, H0742;1,
		-		H0722:1, H0550:1, H0592:1, H0318:1, H081:1, H0820:1, H08-6:1, H08-6:1, H08-6:1, L08-6:1, L08-
				L0764:1, L0804:1, L0775:1, L0655:1, L0493:1, L0659:1, L0783:1, L4501:1, L0664:1, L2654:1, L0458:1,
				H0547:1, S0328:1, H0518:1, L0746:1, L0749:1, H0445:1, S0436:1 and H0542:1.
99	HBJLH40	828130	99	AR201:14, AR178:14, AR176:13, AR296:13, AR233:12, AR181:12, AR197:11, AR228:11, AR192:11, AR192:11, AR177:10, AR267:10, AR162:10, AR193:10, AR174:10, AR161:10, AR163:9, AR175:9, AR235:9, AR269:9,

				AR287:9, AR270:9, AR266:9, AR165:9, AR257:9, AR182:9, AR242:9, AR198:8, AR191:8, AR293:8, AR183:8, AR061:8, AR179:8, AR164:8, AR254:8, AR261:8, AR226:8, AR291:8, AR236:8, AR033:8, AR239:8, AR238:8, AR169:8, AR196:8, AR195:7, AR207:7, AR299:7, AR166:7, AR271:7, AR294:7,
				AR288:7, AR231:7, AR286:7, AR230:7, AR180:7, AR268:7, AR203:7, AR173:7, AR246:7, AR227:7, AR248:7, AR300:7, AR190:6, AR309:6, AR229:6, AR285:6, AR204:6, AR224:6, AR232:6, AR243:6,
				AR282:6, AR053:6, AR255:6, AR289:6, AR221:6, AR247:6, AR295:6, AR199:6, AR262:6, AR189:6,
		-		AR237:6, AR060:5, AR297:5, AR234:5, AR290:5, AR212:5, AR200:5, AR188:5, AR205:5, AR265:5,
				AK308:5, AK108:5, AK055:5, AK215:5, AK225:4, AK225:4, AK246:4, AK216:4, AK316:4, AK256:3, AK256:3, AK256:4, AK256:4, AK256:4, AK26:4,
				AR277:3, AR171:3, AR283:3, AR217:3, AR313:3, AR256:3, AR096:3, AR172:2, AR311:2, AR211:2,
				AR104:2, AR214:2, AR272:2, AR039:2, AR218:1, AR225:1, AR215:1, AR210:1, AR219:1 H0318:6,
				L0766:5, L0777:4, L0439:3, H0583:2, H0734:2, L0803:2, L0456:2, L0456:2, L0747:4, I0030:1, I10530:1, I0050:1, I0
57	HBJNC59	1125802	19	AR268:41, AR290:25, AR267:21, AR270:19, AR180:19, AR245:17, AR269:17, AR096:15, AR183:15,
;			;	JAR177:13, AR182:12, AR271:12, AR240:11, AR242:11, AR234:11, AR246:11, AR283:11, AR173:10,
				AR176:10, AR192:10, AR272:10, AR181:10, AR229:9, AR198:9, AR197:9, AR275:9, AR189:9, AR179:8,
				AR260.8, AR175.7, AR190.7, AR199.7, AR228.7, AR309.7, AR193.7, AR238.7, AR191:7, AR239.7,
				AR174.7, AR231:7, AR178:6, AR161:6, AR162:6, AR195:6, AR055:6, AR163:6, AR061:6, AR258:6,
				AR237.6, AR201.6, AR188.6, AR299.6, AR252.5, AR282.5, AR257.5, AR203.5, AR039.5, AR196.5,
				AR274.5, AR247.5, AR266.5, AR226.5, AR243.5, AR204.4, AR255.4, AR170.4, AR165.4, AR230.4,
				AR164.4, AR200:4, AR166.4, AR207.4, AR295:4, AR288:4, AR300:4, AR313:4, AR233:3, AR285:3,
				AR294:3, AR316:3, AR185:3, AR168:3, AR053:3, AR217:3, AR277:3, AR033:3, AR210:3, AR236:3,
				AR263:2, AR232:2, AR262:2, AR212:2, AR312:2, AR293:2, AR089:2, AR261:2, AR264:2, AR311:2,
				AR222.2, AR171:2, AR227:2, AR205:2, AR214:2, AR211:2, AR216:2, AR060:2, AR291:2, AR287:1,
				AR172:1, AR308:1, AR104:1, AR223:1, AR219:1 H0521:26, H0522:16, S0360:13, H0255:7, L0775:7,
				80374:6, H0445:6, S0408:5, H0581:5, L0768:5, S0404:5, H0638:4, H0427:4, H0575:4, H0617:4, L0767:4,
				L0806:4, H0587:3, H0042:3, H0124:3, H0087:3, S0438:3, L0659:3, H06/2:3, L0/49:3, H0506:3, S0116:2,
				H0254:2, H0661:2, S0358:2, S0376:2, H0637:2, L3071:2, S0280:2, H0706:2, H0120:2, H0318:2, H0327:2,
				H0045:2, H0424:2, H0100:2, S0440:2, H0649:2, L0769:2, L0774:2, L0776:2, L0657:2, L0547:2, L0783:2,
				S0292;2, H0555;2, L0754;2, L0747;2, L0750;2, L0777;2, S0436;2, L0603;2, H0717;1, H0716;1, H0583;1,
				H0663:1, S0356:1, S0444:1, L3649:1, H0741:1, L2831:1, L3388:1, H0411:1, S6022:1, H0550:1, H0455:1,
				H0602:1, H0632:1, T0082:1, H0309:1, H0009:1, H0015:1, H0510:1, H0375:1, H0687:1, H0039:1, H0030:1,
				H0031:1, S0294:1, H0509:1, H0641:1, H0647:1, H0538:1, L0762:1, L0763:1, L5565:1, L0772:1, L0644:1,
				L0648:1, L0385:1, L03/3:1, L0621:1, L03/8:1, L0633:1, L0633:1, L0627:1, L0327:1, L0343:1, L03

				H0689:1, S0380:1, S0332:1, S0044:1, S0406:1, L0755:1, S0260:1, S0434:1, H0653:1, L2367:1 and H0352:1.
	HBJNC59	899397	627	
	HBJNC59	902207	628	1.321d A 1.150d 4 0.150d - 0.1
28	HBNAW17	526797	89	AR266:6, AR245:3, AR168:2, AR246:2, AR217:2, AR177:2, AR291:2, AK204:2, AK274:1, AK105:1, AR267:1, AR312:1, AR311:1, AR164:1, AR361:1, AR182:1, AR299:1, AR257:1, AR166:1, AR243:1, AR309:1, AR284:1, AR175:1, AR176:3 and H0188:1.
65	HBOEG11	1300752	69	AR277:17, AR283:14, AR240:13, AR055:9, AR219:9, AR282:8, AR316:8, AR185:7, AR089:6, AR313:6, AR096:6, AR299:6, AR300:5, AR104:4, AR218:4, AR039:3, AR060:3 S0364:1
	HB0EG11	1121709	629	
	HBOEG11	1049830	630	COLOR CALCAL A PROCESS AND COLORS
09	HBOEG69	793786	70	AR282:73, AR253:4, AR221:3, AR235:3, AR216:3, AR171:2, AR180:2, AR27/:2, AR310:4, AR215:2,
				AR205:2, AR272:2, AR271:2, AR108:2, AR205:1, AR205:1, AR224:1 L0771:4, H0556:3, S0007:3, L0766:3,
				1.0493;3, L0748;3, H0265;2, S0418;2, H0271;2, H0422;2, S0402;1, H0657;1, H0656;1, H0580;1, L0463;1,
				H0592:1, H0427:1, H0156:1, H0390:1, H0581:1, H0194:1, H0596:1, H0373:1, H0687:1, H0615:1, S0364:1,
				H0413:1, H0649:1, S0422:1, L0457:1, L0502:1, L0763:1, L0776:1, S0428:1, H0658:1, H0670:1, S0330:1,
				10602:1, H0096:1, H0436:1, L0734:1, L0736:1, L07
61	HBXFL29	842807	1/	[AK243:4, AK273:3, AK213:3, AK137:2, AK180:2, AK203:2, AK203:4, AK273:4, AK273:3, AK265:1, AK266:1,
				AR039:2, AR223:2, AR223:2, AR21:2, AR1:2, AR230:1, AR282:1, AR230:1, AR245:1, AR162:1,
				ARU65 1, AR311.1, AR270:1, AR163:1, L0754:5, L0438:3, S0380:3, L0758:3, S0010:2, L0638:2, L0771:2,
				1 0430-3 1 0755-3 1 0731-3 H0663-1, S0360-1, S6026-1, S0222-1, H0370-1, H0438-1, H0574-1, H0632-1,
				80346.1 S0182.1 H0581.1 H052.1 H0596.1, T0110.1, H0050.1, L0471.1, H0014.1, H0375.1, H0594:1,
				H0416:1, H0032:1, H0674:1, L0455:1, H0038:1, H0551:1, H0412:1, H0413:1, H0131:1, L0769:1, L0662:1,
				L0766:1, L0803:1, L0774:1, L0775:1, H0547:1, H0435:1, H0521:1, L0777:1, L0592:1, L0608:1, S0242:1 and
				80194:1.
62	HCACU58	625923	72	AR170.4, AR225.4, AR197.3, AR253.3, AR183.3, AR242.3, AR270.2, AR311.2, AR266.2, AK273.2,
				_
				AR240:1, AR269:1, AR283:1, AR192:1, AR164:1, AR300:1, AR224:1, AR252:1 H0341:1, H0125:1,
				H0580:1, L0747:1 and L0749:1.
63	HCACV51	1306706	73	AR264:6, AR245:5, AR263:5, AR309:5, AR161:5, AR162:5, AR197:5, AR163:5, AR165:5, AR164:5,
3				AR166:4, AR272:4, AR195:4, AR176:4, AR225:4, AR274:4, AR312:4, AR224:4, AR205:4, AR271:4,
				AR104:4, AR253:4, AR308:4, AR173:4, AR172:3, AR250:3, AR180:3, AK311:3, AK108:3, AK273:3,

				AR246:3, AR282:3, AR213:3, AR217:3, AR243:3, AR223:3, AR201:2, AR171:2, AR313:2, AR193:2, AR060:2, AR169:2, AR316:2, AR033:2, AR204:2, AR096:2, AR270:2, AR055:2, AR089:2, AR207:2, AR060:2, AR169:2, AR207:2, AR204:2, AR2
				AR039:2, AR231:2, AR238:2, AR033:2, AR233:2, AR230:2, AR215:2, AR215:2, AR215:2, AR215:1, AR230:1, AR2
				AK192:1, AK173:1, AK190:1, AK199:1, AK189:1, AK203:3, S0422:3, L0803:3, L0803:3, S0418:2, L0794:2, L0748:7, L0731:7, L0438:6, L0439:5, L3388:3, L3623:3, S0422:3, L0803:3, L0803:3, S0418:2, L0794:2, L0748:7, L0731:7, L0438:6, L0439:5, L3388:3, L3633:3, S0422:3, L0803:3, L0803:3, S0418:2, L0794:2, L0778:1, L0738:2, L0803:3, L08
				L0665:2, L0754:2, L0779:2, L0593:2, H0656:1, H0661:1, H0125:1, L3432:1, L3089:1, H0497:1, H0374:1, H0098:1, L0105:1, H0746:1, H0046:1, H0050:1, H0083:1, H0060:1, L0483:1, H0553:1, S0036:1, H0090:1,
-				H0551:1, H0560:1, H0625:1, L3815:1, H0529:1, L0638:1, L3905:1, L0764:1, L0662:1, L0364:1, L0804:1, L077:1, L077:1, L075:1, L0595:1, H0542:1 and H0422:1.
	HCACV51	598022	631	
\$	HCDBW86	520435	74	AR239:9, AR231:9, AR161:7, AR162:7, AR163:7, AR226:6, AR176:6, AR266:6, AR269:6, AR181:3,
				AR228:5, AR238:5, AR183:5, AR268:5, AR250:5, AR255:5, AR257:5, AR227:5, AR225:4, AR215:4,
				AR173.3, AR177.4, AR182.4, AR182.4, AR235.4, AR275.4, AR277.4, AR178.4, AR165.4, AR291.4,
				AR171:4, AR179:4, AR164:3, AR191:3, AR166:3, AR230:3, AR289:3, AR313:3, AR240:3, AR247:3,
				AR255:3, AR061:3, AR272:3, AR199:3, AR168:3, AR300:3, AR174:3, AR170:3, AR222:3, AR293:3,
				AR296:3, AR258:3, AR288:3, AR190:2, AR188:2, AR286:2, AR290:2, AR264:2, AR207:2, AR053:2,
				AR294:2, AR297:2, AR224:2, AR287:2, AR285:2, AR200:2, AR312:2, AR277:2, AR282:2, AR225:2,
				AR295:2, AR203:2, AR189:2, AR172:2, AR299:2, AR256:2, AR096:2, AR246:2, AR316:2, AR216:2,
				AR221:2, AR232:2, AR210:2, AR185:1, AR055:1, AR260:1, AR311:1, AR089:1, AR060:1, AR218:1,
				AR213:1, AR211:1, AR219:1, AR250:1, AR217:1, AR201:1, AR308:1 H0251:1
65	HCE1089	520329	75	AR313:68, AR039:49, AR096:41, AR089:35, AR299:35, AR242:34, AR173:32, AR196:31, AR300:28,
				AR258:28, AR185:27, AR240:25, AR162:24, AR163:24, AR262:24, AR204:24, AR175:23, AR161:23,
				AR247.23, AR218:23, AR264:22, AR229:22, AR316:22, AR174:21, AR178:21, AR165:21, AR199:20,
				AR236:20, AR277:20, AR164:20, AR166:20, AR179:20, AR257:20, AR219:20, AR183:19, AR234:19,
				AR180:18, AR293:18, AR181:18, AR192:18, AR191:17, AR312:17, ARV00:17, AR209:10, AR193:10,
				AR226:16, AR270:16, AR177:16, AR233:15, AR285:15, AR296:15, AR182:14, AR104:14, AR197:14,
				AR294:14, AR297:14, AR053:14, AR261:14, AR238:14, AR203:13, AR243:13, AR201:13, AR196:15,
				AR255.13, AR275.13, AR282.13, AR200.13, AR230.13, AR231:13, AK201:12, AK280:12, AK186:12,
				AR176:12, AR212:12, AR189:12, AR235:12, AR237:11, AR295:11, AR287:11, AR252:11, AR253:11,
				AR260:11, AR245:11, AR228:10, AR309:10, AR263:10, AR268:10, AR288:10, AR253:10, AR239:3,
				AR254:9, AR267:9, AR033:9, AR2/4:9, AR213:9, AR250:9, AR220:9, AR227:9, AR270:9,

				AR168:6. AR168:6.
				AR291:8, AR271:8, AR205:8, AR193:1, AR200:1, AR30:1, AR311:4, AR169:4, AR061:4, AR217:3,
				AR221:3, AR170:3, AR225:3, AR215:3, AR223:3, AR171:3, AR224:3, AR222:2, AR214:2 H0635:1,
				H0052:1, L0648:1, L0662:1, L0601:1 and H0343:1.
99	HCE2F54	634016	92	AR253:23, AR250:22, ARZ/1:21, AR19/:20, AR195:15, AR195:16, AR210:11, AR240:10, AP360:12, AP360:13, AR240:10,
		<u>-</u>		AR198:12, AR265:10, AR162:10, AR229:10, AR177:10, AR163:10, AR242:10, AR243:10, AR212:10,
				AR309:10, AR246:10, AR268:9, AR181:9, AR245:9, AR165:9, AR183:9, AR275:9, AR238:9, AR291:9,
				AR178:9, AR264:9, AR164:9, AR196:9, AR204:9, AR188:8, AR166:8, AR182:8, AR191:8, AR253:3,
				AR175:8, AR289:8, AR179:8, AR290:8, AR237:8, AR189:8, AR225:8, AR235:8, AR193:8, AR247:9,
				AR270:8, AR234:7, AR219:7, AR201:1, AR201:1, AR201:1, AR201:1, AR201:1, AR211:7, AR213:7, AR203:7,
				AK308:1, AK1/3:1, AK290:1, AK27:1, AK231:1; AK218:6, AK288:6, AK192:6, AK295:6,
				AR313:1, AR261:0, AR033:0, AR233:5, AR233:5, AR233:5, AR233:5, AR233:5, AR236:5,
				AK294:6, AK203:0, AK203:0, AK203:0, AK203:0; AK204:6, AK2
				AR316:5, ARU96:3, AR230:3, AR260:3, AR211:3, AR216:4, AR260:4, AR260:4, AR283:4,
				AR214:5, AR168:4, AR223:4, AR172:4, AR220:4, AR103:4, AR326:3, AR171:2, AR326:3, AR326:3, AR371:2,
				AR216.4, AR232.4, AR060.4, AR227.4, AR277.5, AR19.4, 10666.4, L0438.4, S0126.4, L0754.4, L0779.4,
				AKI/012, AKZ13:1 H0032.3, L0734.0, L0735.0; L0322.3; L0322.2; H0494:2, L0761:2, L0641:2, L0649:2,
				H001/13, L0746.3, L0751.3, L0752.3, 12832.2, L0439.2, L0747.2, L0749.2, H0685.1, H0713.1, H0295.1,
				L0807.2, L0317.2, L0005.2; C0005.2; C00005.1, C00005.1, C00005.1, L03005.1,
				H034111, H0464-1, 11023311, 1102311, H010611, H010811, H008111, H006111, H026611, H042811, H010011,
				100322.1, 110002.1, 110233.1, 110233.1, 110621.1, 10004.1, 10051.1, 100551.1, 100551.1, 100664.1, 100604.1
				1,0665;1, T0068;1, H0672;1, H0539;1, L0602;1, S0406;1, H0436;1, H0478;1, L0777;1, L0755;1, H0422;1 and
				H0506:1.
29	HCE3G69	728432	11	AR033:18, AR197:14, AR195:13, AR196:11, AR271:10, AR242:10, AR243:9, AR195:9, AR201:3, AR201:3,
3				AR164:9, AR182:9, AR166:9, AR269:8, AR198:8, AR235:8, AR161:8, AR162:8, AR183:9, AR212:9,
				AR268:8, AR296:8, AR163:8, AR176:8, AR193:8, AR238:1, AR224:1, AR200:1, AR24-1, AR200:1,
				AR291:7, AR225:7, AR309:6, AR178:6, AR270:6, AR188:6, AR173:6, AR226:6, AR228:6, AR282:0,
				AR246:6, AR169:6, AR213:6, AR212:6, AR192:6, AR177:6, AR261:6, AR250:6, AR173:6, AR204:0,
				AR239:6, AR233:6, AR234:6, AR255:6, AR288:5, AR171:5, AR267:5, AR217:5, AR290:5, AR106:5,
				AR223:5, AR236:5, AR089:5, AR289:5, AR191:5, AR203:5, AR224:5, AR245:5, AR061:5, AR104:5,
				AR308:5, AR229:5, AR205:5, AR060:5, AR039:5, AR231:5, AR240:5, AR035:5, AR2/4:5, AR267:5,
				AR222:5, AR216:5, AR316:5, AR214:5, AR215:5, AR204:5, AR199:5, AR119:5, AR119:5

				AR312:4, AR180:4, AR313:4, AR295:4, AR179:4, AR170:4, AR263:4, AR293:4, AR299:4, AR232:4, AR299:4, AR232:4, AR285:4, AR10:4, AR296:4, AR232:4, AR210:4, AR210:4, AR296:4, AR300:4, AR300:4, AR300:4, AR300:4, AR300:4, AR300:4, AR230:4, AR185:3, AR286:3, AR227:3, AR262:3, AR085:3, AR286:3, AR286:3, AR286:2, AR286:2, AR282:1, L0439:9,
				H0052:7, L0748:7, S0440:5, L0758:5, H0046:4, H0038:4, L0769:4, S0442:3, H0013:3, H0253:3, T0010:3, H0052:7, L0746:3, H0144:3, H0521:3, S0404:3, L0752:3, L0731:3, H0656:2, S0358:2, S0360:2, S0222:2, H074:3, L0776:3, H074:3, L0776:3, H074:3, L0776:3, H0656:2, L0751:2, L0783:2, L0793:2, H0658:2, H0666:2, L0751:2, L0783:2, L0793:2, H0658:2, H0666:2, L0751:2, L0783:2, L0783:2, L0783:2, H0658:2, H0666:2, L0751:2, L0783:2, L0783:2, H0658:2, H0658:2, L0751:2, L0783:2, L0783:2, L0783:2, H0658:2, H0658:2, L0783:2, L0783:
				L0754:2, L0745:2, L0747:2, L0750:2, H0624:1, H0265:1, H0556:1, H0686:1, S0134:1, S0212:1, S0001:1, H0254:1, H0661:1, L0946:1, S0354:1, S0444:1, S0408:1, H0734:1, L3081:1, S0300:1, S0278:1, H0369:1,
				H0370:1, H0333:1, H0574:1, H0486:1, H0036:1, H0563:1, H0597:1, H0545:1, H0572:1, H0024:1, S038:1, S0051:1, S0250:1, H0252:1, H0428:1, H0039:1, H0644:1, L0055:1, H0674:1, H0135:1, H0087:1, T0067:1, L0057:1, H0087:1, H008
				H0488;1, L3194:1, H0325;1, L0703:1, L0704:1, L0526:1, L0666:1, L0664:1, L0665:1, S0053:1, L0803:1, L0775:1, L0805:1, L0665:1, L0666:1, L0666:1, L0665:1, L06
				L0710:1, L2654:1, H0547:1, H0682:1, H0435:1, H06/0:1, H0600:1, H0646:1, H0646:1, S0526:1, L0753:1, L07
	0/0/001	704246	663	S0436:1, S0011:1, S0192:1, H0542:1, H0423:1, S0398:1 and H0500:1.
	HCE3G09	494340	700	101.10 AD060.0 AD177.0 AR104.0
89	HCEEA88	634967	78	AR196:17, AR089:13, AR055:13, AR285:12, AR255:10, AR191:10, AR050:5, AR172:5, AR162:8, AR162:8, AR162:8, AR174:8, AR282:8, AR316:8, AR096:8, AR190:8, AR285:8, AR161:8, AR162:8,
				AR261:8, AR188:7, AR223:7, AR224:7, AR163:7, AR299:7, AR166:7, AR165:7, AR200:7, AR225:7,
				AR275:7, AR164:7, AR236:7, AR175:7, AR240:7, AR216:6, AR177:6, AR309:6, AR219:6, AK117:6,
		. "		AR311:6, AR2/4:6, AR216:6, AR200:6, AR310:3, AR300:5, AR308:5, AR308:5, AR181:5, AR183:5,
				AR287:5, AR053:5, AR173:5, AR269:5, AR270:5, AR262:5, AR214:5, AR222:5, AR195:5, AR272:5,
				AR255:4, AR258:4, AR178:4, AR213:4, AR312:4, AR210:4, AR300:4, AR294:4, AR286:4, AR290:4,
				AR182:4, AR247:4, AR293:4, AR170:4, AR268:4, AR412:4, AR456:4, AR035:4, AR412:-4, AR4127:-4, AR4127:-4, AR4127:-4, AR4127:-3, AR4127
				AR228:3, AR193:3, AR256:3, AR263:3, AR267:3, AR234:3, AR226:2, AR229:2, AR231:2, AR233:2,
				AR201:2, AR243:2, AR061:2, AR232:2, AR207:2, AR169:2, AR203:2, AR192:1, AR230:1, AR252:1
				H0659.4, L0770.3, L0747.3, H0663.2, S0360.2, L3388.2, L0521.2, L0776.2, S0126.2, H0658.2, S0406.2,
				L0748:2, L0755:2, L0758:2, L0759:2, S0242:2, T0002:1, H0686:1, H0341:1, L3639:1, L0516:1, S0334:1,
				S0408:1, H0052:1, H0009:1, H0051:1, H0083:1, H0266:1, H0615:1, L0483:1, H0448:1, H0348:1, S0422:1,
				L0520:1, L0625:1, L0662:1, L0766:1, L0049:1, L0319:1, L3001:1, L3011:1, 110040:1, 5301:1, L0040:1, L00
69	HCEFB69	748245	79	AR241:76, AR313:31, AR184:21, AR032:20, AR032:10, AR122:10, AR303:13, AR130:13,

				AR259:14, AR270:14, AR198:14, AR265:14, AR182:14, AR292:14, AR096:14, AR312:14, AR185:13, AR279:13, AR247:13, AR204:12, AR089:12, AR162:12, AR161:12, AR240:12,
				AR177:12, AR163:12, AR285:11, AR243:11, AR218:11, AR053:11, AR273:11, AR249:11, AR233:10,
				AR298:10, AR248:10, AR194:10, AR238:10, AR267:10, AR258:10, AR271:10, AR293:10, AK286:10, AR293:10, AR298:10,
				AK310:10, AK200:10, AKZ/4:3, AK230:3, AK17:3, AKZ77:0, AK220:3; AK314:7, AK314:7, AK314:7, AK237:7,
				AR202.7, AR289:6, AR256:6, AR294:6, AR316:6, AR179:6, AR291:6, AR206:6, AR231:6, AR178:6,
				AR264:6, AR309:6, AR227:6, AR180:6, AR263:6, AR253:6, AR183:5, AR060:5, AR280:5, AR266:5,
				AR173:4, AR176:4, AR181:4, AR174:4, AR295:4, AR061:4, AR055:4, AR242:4, AR205:3, AR236:3,
				AR283:3, AR165:3, AR196:3, AR232:3, AR164:3, AR230:3, AR246:3, AR272:3, AR166:3, AR239:3,
	•			AR281:3, AR171:3, AR228:2, AR228:2, AR225:2, AR193:2, AR25/:2, AR311:2, AR223:2,
				AR262:2, AR212:2, AR188:2, AR245:2, AR201:2, AR169:2, AR191:1, AR200:1, AR27:1, AR27:1
				H0052:1, S0406:1 and L0439:1.
70	HCEFB80	1143407	08	H0052:6, L0439:5, L0794:3, L0748:3, L0415:2, H0661:2, H0559:2, S0049:2, H0327:2, S0051:2, H0399:2,
				S0036.2, L0351.2, L0770.2, H0144.2, L0758.2, L0759.2, S0116:1, S0110:1, H0637.1, H0261.1, S0222.1,
				H0438:1, H0013:1, H0569:1, H0320:1, S0422:1, H0529:1, L0638:1, L0517:1, L0438:1, S0126:1, L0749:1,
				L0756:1 and L0592:1.
	HCEFB80	1046853	633	
71	HCEGR33	425212	18	AR221:5, AR225:4, AR313:4, AR180:4, AR162:4, AR161:4, AR165:4, AR163:4, AR217:3, AR164:3,
				AR166:3, AR240:3, AR235:3, AR199:3, AR264:3, AR309:3, AR089:3, AR181:3, AR1/6:3, AR1/2:2,
				AR247:2, AR270:2, AR096:2, AR205:2, AR188:2, AR267:2, AR196:2, AR291:2, AR275:2, AR213:2,
				AR191:2, AR300:2, AR263:2, AR173:2, AR172:2, AR223:2, AR060:2, AR197:2, AR236:2, AR293:2,
				AR229:2, AR285:2, AR200:2, AR183:2, AR177:2, AR262:2, AR185:2, AR178:2, AR311:2, AR268:2,
				AR179:2, AR290:2, AR195:2, AR269:2, AR316:2, AR287:2, AR237:2, AR104:1, AR231:1, AR228:1,
				JAR227:1, AR233:1, AR272:1, AR282:1, AR238:1, AR258:1, AR277:1, AR174:1, AR226:1, AR261:1,
				AR189:1, AR239:1, AR283:1, AR252:1, AR257:1, AR288:1, AR210:1 H0624:1, S0282:1, H0580:1,
				H0619:1, H0393:1, S0222:1, H0108:1, H0052:1, H0615:1, S0036:1, H0494:1 and L0366:1.
72	HCEMP62	684780	82	AR215:144, AR170:118, AR217:80, AR214:80, AR171:78, AR225:76, AR168:73, AR169:61, AR223:59,
				JR296:57, AR221:55, AR216:54, AR291:50, AR243:44, AR172:44, AR212:44, AR266:43, AR202:42,
				AR255:41, AR224:40, AR207:39, AR288:39, AR210:38, AR245:38, AR222:38, AR195:35, AR263:35,
				AR192:35, AR053:33, AR253:33, AR246:33, AR311:32, AR213:32, AR289:32, AR256:31, AR308:31,
				AR309:30, AR162:30, AR312:30, AR297:30, AR287:29, AR161:29, AR264:29, AR285:29, AR180:28,
				AR165:28, AR235:28, AR261:28, AR270:28, AR197:28, AR163:27, AR198:27, AK293:27, AK183:27,

				AR201:26, AR268:26, AR269:26, AR236:26, AR286:25, AR164:25, AR193:25, AR182:25, AR219:25,
-				AR176:24, AR211:24, AR254:24, AR181:24, AR262:24, AR258:24, AR166:24, AR242:24, AR033:23, AR176:24, AR253:21,
				AR204:21, AR271:21, AR274:21, AR089:21, AR275:20, AR267:20, AR199:20, AR250:20, AR175:20,
				AR282:20, AR189:19, AR260:19, AR316:19, AR177:18, AR277:18, AR272:18, AR191:18, AR283:18,
				AR237:18, AR218:17, AR188:17, AR196:17, AR231:16, AR203:16, AR190:16, AR179:16, AR290:16,
				AR313:16, AR239:15, AR299:15, AR104:15, AR252:15, AR225:14, AR01:14, AR039:14, AR103:14,
				AKI/4:14, AK300:13, AK230:13, AK030:12, AK030:12, AK220:12, AK234:12, AK230:13, AK230:
				H0181:2, H0135:2, L2257:2, H0547:2, H0521:2, H0522:2, S0037:2, H0713:1, H0583:1, S0001:1, H0484:1,
				L3311:1, H0411:1, S0278:1, H0370:1, H0600:1, H0586:1, H0587:1, T0039:1, L3496:1, H0318:1, H0581:1,
				S0049:1, H0052:1, H0041:1, H0123:1, H0266:1, H0179:1, H0188:1, H0290:1, H0286:1, S0250:1, H0428:1,
				H0030:1, H0165:1, H0040:1, H0063:1, H0264:1, H0509:1, S0150:1, S0002:1, L5622:1, S0216:1, H0702:1, L2377:1, H0593:1, S0044:1, H0436:1, L0744:1, L0777:1, S0434:1, H0543:1 and S0458:1.
	HCEMP62	879178	634	
73	HCENK38	658737	83	AR221:5, AR192:3, AR254:2, AR053:2, AR180:2, AR266:2, AR193:2, AR231:2, AR261:2, AR291:2,
				AR263:2, AR269:2, AR274:2, AR272:2, AR255:2, AR204:2, AR257:2, AR243:2, AR290:2, AR282:1,
				AR096:1, AR195:1, AR182:1, AR217:1, AR240:1, AR222:1, AR170:1, AR270:1, AR181:1, AR216:1,
				AR247:1, AR225:1, AR236:1 L0747:15, L0745:12, L0746:12, L0754:9, L0439:6, S0007:5, L0740:5,
				L0779:5, H0616:4, L0768:4, L0659:4, L0663:4, H0013:3, L0766:3, H0144:3, L0731:3, L0758:3, H0556:2,
				S0132:2, S0010:2, H0052:2, L0471:2, H0014:2, H0031:2, L0806:2, L0518:2, L0666:2, L0665:2, H0547:2,
				L0748:2, L0750:2, L0757:2, L0592:2, H0423:2, H0624:1, L3643:1, S0116:1, H0663:1, H0449:1, S0420:1,
				L0005:1, S0360:1, S0046:1, H0749:1, H0619:1, H0411:1, H0587:1, H0485:1, L3653:1, L0021:1, S0474:1,
				H0581:1, S0049:1, H0046:1, H0050:1, H0242:1, H0024:1, L0163:1, S0388:1, H0328:1, H0615:1, H0039:1,
				H0644:1, S0366:1, H0135:1, H0090:1, H0040:1, H0412:1, H0102:1, H0100:1, L0564:1, S0440:1, H0131:1,
				[H0633:1, L0769:1, L0638:1, L0667:1, L0764:1, L0771:1, L0521:1, L0649:1, L0774:1, L0775:1, L0523:1,
				L0776:1, L0655:1, L0527:1, L0636:1, L0519:1, S0053:1, L0438:1, L0352:1, H0520:1, H0689:1, H0690:1,
				H0658:1, H0660:1, H0648:1, H0710:1, S0350:1, S0044:1, S0146:1, H0436:1, L0611:1, L0749:1, L0786:1,
				S0436:1, L0362:1, L0366:1, S0026:1, H0667:1, H0542:1 and H0422:1.
74	HCEWE17	941941	84	AR172:5, AR198:5, AR181:5, AR171:5, AR266:4, AR216:4, AR205:4, AR214:4, AR225:4, AR264:4,
				AR162:4, AR163:4, AR165:4, AR231:4, AR175:4, AR196:4, AR164:4, AR161:4, AR269:4, AR182:3,
				AR309:3, AR199:3, AR275:3, AR291:3, AR169:3, AR261:3, AR180:3, AR287:3, AR282:3, AR192:3,
				AR179:3, AR254:3, AR173:3, AR250:3, AR268:3, AR193:3, AR221:3, AR288:3, AR191:3, AR296:3,
				AR312:3, AR236:3, AR270:3, AR274:3, AR297:3, AR233:3, AR17:3, AR174:3, AR280:3, AR202:3,

				AR204:3, AR207:2, AR183:2, AR285:2, AR300:2, AR311:2, AR255:2, AR238:2, AR293:2, AR295:2, AR2003:2, AR2003:2, AR230:2, AR237:2, AR237:2, AR176:2, AR223:2, AR230:2,
				ARC61:2, AR228:2, AR289:2, AR190:2, AR229:2, AR257:2, AR290:2, AR226:2, AR308:2, AR166:2, AR260:2, AR2
				AR212:2, AR185:2, AR294:2, AR235:2, AR258:2, AR272:2, AR224:2, AR240:2, AR213:2, AR247:2,
				AR096:2, AR267:2, AR313:1, AR316:1, AR060:1, AR239:1, AR188:1, AR260:1 L0749:2, H0261:1, H0574:1, L0803:1, L0775:1 and L0748:1.
	HCEWE17	893535	635	
	HCEWE17	460407	929	
75	HCEWE20	543370	85	AR253:8, AR053:6, AR196:6, AR198:5, AR191:5, AR313:5, AR245:4, AR181:4, AR174:4, AR195:4,
				AR189:3, AR096:3, AR089:3, AR213:3, AR177:3, AR270:3, AR234:3, AR300:3, AR190:3, AR203:3,
		-		AR2243, AR2473, AR1883, AR2732, AR1732, AR7220.2, AR103.2, AR137.1.2, AR166.2, AR240.2,
				AK102:2, AK100:2, AK100:2, AK105:2, AK101:2, IAK105:2, AK178:2, AK116:2, AK204:2, AK173:2,
				AR205.2, AR206.2, AR207.2, AR212.2, AR309.2, AR213.2, AR216.2, AR229.1, AR294.1, AR237.1,
				AR290.1 AR235.1 AR239.1, AR228.1, AR288.1, AR234.1, AR201:1, AR168:1, AR289.1, AR293:1,
				AR286.1, AR222:1, AR236:1, AR258:1, AR182:1, AR033:1, AR287:1, AR283:1, AR282:1, AR266:1,
	_			AR232:1 AR262:1 AR230:1 H0052:2, H0261:1, H0271:1 and S0458:1.
7,	HCECI 188	553587	98	AR225:3. AR172:3, AR252:3, AR214:2, AR266:2, AR217:2, AR282:2, AR243:2, AR238:2, AR039:2,
? 	1101		3	AR089:2, AR271:2, AR226:2, AR237:2, AR231:2, AR183:2, AR290:2, AR236:2, AR221:2, AR261:1,
				AR313:1, AR277:1, AR212:1, AR166:1, AR295:1, AR289:1, AR269:1, AR230:1, AR232:1, AR165:1,
				AR177:1, AR228:1, AR216:1, AR268:1, AR234:1, AR164:1, AR060:1, AR270:1, AR162:1, AR235:1,
				AR173:1, AR161:1, AR257:1, AR180:1 H0519:1, L0740:1 and H0422:1.
77	HCFMV71	526599	87	AR309:31, AR311:23, AR308:18, AR312:17, AR313:9, AR264:6, AR053:6, AR263:6, AR170:6, AR198:5,
:				AR096:5, AR207:5, AR161:5, AR162:5, AR192:5, AR197:5, AR214:5, AR089:5, AR235:4, AR163:4,
				AR165:4, AR240:4, AR166:4, AR246:4, AR164:4, AR261:4, AR253:4, AR277:4, AR176:4, AR212:4,
				AR272:4, AR195:4, AR274:4, AR252:4, AR245:4, AR271:4, AR270:4, AR223:4, AR213:4, AR316:4,
				AR217:4, AR039:4, AR282:4, AR177:4, AR230:3, AR193:3, AR222:3, AR178:3, AR104:3, AR224:3,
· ·				AR289:3, AR183:3, AR295:3, AR290:3, AR286:3, AR237:3, AR297:3, AR275:3, AR288:3, AR268:3,
				AR2200:3, AR238:3, AR060:3, AR234:3, AR180:3, AR226:3, AR247:3, AR239:2, AR291:2, AR201:2,
				AR216:2, AR269:2, AR285:2, AR033:2, AR228:2, AR174:2, AR262:2, AR229:2, AR181:2, AR055:2,
				AR243:2, AR185:2, AR267:2, AR232:2, AR300:2, AR205:2, AR221:2, AR182:2, AR231:2, AR293:2,
			_	AR233:2, AR299:2, AR287:2, AR227:2, AR188:2, AR175:2, AR061:2, AR283:2, AR296:2, AR296:2,
				AR203:2, AR257:2, AR196:2, AR266:1, AR258:1, AR1/1:1, AR225:1, AR190:1, AR219:1, AR257:1,

				AR179:1, AR255:1, AR210:1, AR168:1 S0358:11, S0408:4, S0376:2, S0444:2, H0597:2, H0231:2, L0764:2, L0771:2 S0354:1 H0085:1, H0154:1, S0374:1, S0404:1 and H0423:1.
78	HCFNN01	430297	88	AR226:48, AR227:34, AR232:34, AR239:31, AR238:26, AR207:22, AR061:21, AR283:20, AR263:18, AR216:17, AR214:16, AR055:16, AR224:16, AR089:15, AR264:15, AR311:14, AR277:14, AR235:13, AR282:13, AR104:13, AR104:12, AR222:12, AR165:12, AR192:12, AR231:12, AR164:12, AR172:11, AR282:13, AR104:13, AR104:13, AR169:12, AR222:12, AR192:11, AR219:11, AR237:11, AR237:11, AR237:11, AR237:11, AR237:11, AR237:11, AR237:11, AR237:11, AR309:11, AR252:10, AR106:11, AR219:11, AR219:11, AR219:11, AR237:11, AR309:11, AR252:10, AR227:10, AR272:10, AR198:10, AR219:10, AR219:10, AR219:10, AR219:11, AR219:11, AR219:11, AR230:11, AR309:11, AR252:10, AR227:3, AR254:3, AR258:3, AR240:8, AR230:9, AR193:8, AR197:8, AR200:7, AR295:7, AR297:7, AR297:3, AR297:2, AR297:1, L0780:1, H0542:1 and H0422:1.
79	HCFOM18	553582	68	AR171:4, AR309:4, AR165:3, AR162:3, AR161:3, AR164:3, AR313:3, AR166:3, AR163:3, AR183:3, AR240:3, AR205:2, AR203:2, AR238:2, AR104:2, AR053:2, AR217:2, AR312:2, AR096:2, AR240:3, AR193:2, AR242:2, AR236:2, AR242:2, AR236:2, AR242:2, AR242:2, AR242:2, AR242:2, AR242:2, AR242:2, AR261:2, AR261:2, AR263:2, AR263:2, AR263:2, AR263:1, AR293:2, AR299:2, AR168:2, AR277:1, AR214:1, AR214:1, AR234:1, AR244:1, AR2424:1, AR182:1, AR182:1, AR182:1, AR182:1, AR263:1, AR
08	HCHNF25	1352270	06	AR199:83, AR164:50, AR166:49, AR250:49, AR165:46, AR211:44, AR248:43, AR210:43, AR296:40, AR272:40, AR212:39, AR285:39, AR273:38, AR308:35, AR195:35, AR291:34, AR052:33, AR255:32, AR254:32, AR196:31, AR312:31, AR298:29, AR280:28, AR189:28, AR261:27, AR289:27, AR197:27, AR266:27, AR188:26, AR284:26, AR238:25, AR314:24, AR309:24, AR310:24, AR311:24, AR297:24, AR191:23, AR161:23, AR162:23, AR265:23, AR265:23, AR265:23, AR3163:22, AR315:22, AR265:22, AR286:21, AR296:21, AR286:21, AR306:13, AR286:13, AR286:13, AR286:13, AR286:13, AR286:13, AR286:13, AR286:13, AR286:13, AR288:14, AR286:13, AR286:13, AR286:13, AR288:16, AR288:18, AR288

			-	AR258:15, AR300:15, AR218:15, AR176:14, AR175:14, AR267:14, AR183:13, AR274:13, AR316:13,
				AR246:13, AR231:12, AR185:12, AR271:12, AR205:12, AR295:12, AR277:11, AR196:11, AR205:11, AR294:11, AR261:11, AR226:10, AR234:10, AR177:10, AR252:10, AR232:10, AR055:9,
		-		AR215:9, AR192:9, AR039:9, AR221:9, AR216:9, AR179:9, AR229:9, AR214:8, AR223:8, AR225:8,
				AK281:8, AR207:8, AR251:6, AR194:6, AR233:6, AR202:6, AR241:6, AR171:6, AR227:6, AR168:6,
				AR204:5, AR172:5, AR228:5, AR206:5 L0514:16, L0500:13, L0777:11, L0499:10, L0755:10, L0769:8,
				L0493:8, L0747:8, L0749:7, L0766:6, L0748:6, S0360:5, L0497:5, L0506:3, H0457:4, L0507:4, L0507:4, L0507:4, L05 F 0805:4 S0374:4 H0650-4 L0770-4 L0596:4 L0588:4, S0356:3, S0358:3, S0438:3, S0440:3, S0422:3,
				L0505:3, L0761:3, L0646:3, L0771:3, L0498:3, L0803:3, L0774:3, L0776:3, L0555:3, L0553:3,
				L0659:3, L0666:3, L0751:3, L0758:3, L0759:3, H0580:2, H0431:2, H0251:2, H0529:2, L0504:2, L0506:2,
				L0373:2, L0764:2, L0649:2, L0650:2, L037:3:4, L051:2, L0312:2, L0003:2, L0003:2, L0110:2, C0120:3;
	-			H0689:2, S0330:2, L0730:2, L0732:2, S0434:2, L0371:2, L030:2, 1107:2:1, 1032:1, H0421:1, H0052:1, H0052:1, H0486:1, H0421:1, H0052:1, H0486:1, H0486:1, H0421:1, H0052:1, H0486:1, H0486:1, H0421:1, H0052:1, H0486:1, H048
				H0150-1, H0510-1, H0375-1, S0316-1, H0687-1, H0252-1, H0606-1, H0169-1, T0067-1, H0412-1, S0038-1,
				1,0351:1, H0509:1, L0796:1, L0800:1, L0642:1, L0374:1, L0765:1, L0773:1, L0388:1, L0376:1, L0784:1,
				L0806:1, L0509:1, L0653:1, L0807:1, L0782:1, L0809:1, L0543:1, L0788:1, L2260:1, L2261:1, H0144:1,
				H0690:1, H0658:1, H0648:1, S0378:1, S0380:1, H0696:1, S0406:1, S3014:1, L0740:1, L0734:1, L0730:1,
	TOTATOLE	(17037	637	LU(23:1, LU(31:1, LU(3):1, 11043:1, 10430:1, 10050:1, 100
	DCDINF23	7/0000		10501 A P 171 A P 171 A P 175.7 A P 165.7 A P 105.7
81	нсмѕ056	740781	91	AR223:4, AR225:3, AR039:3, AR213:3, AR252:2, AR282:2, AR171:4, AR308:4, AR100:2, AR159:2, AR250:1, AR257:1, AR271:1, AR255:1, AR255:1, AR295:1, AR2
				AR210:1, AR163:1, AR199:1, AR162:1 H0196:1
82	HCMST14	562010	92	AR033:7, AR176:6, AR162:6, AR161:5, AR282:5, AR163:5, AR178:5, AR270:5, AR263:5, AK183:5,
				AR266:5, AR172:5, AR309:5, AR240:5, AR165:4, AR264:4, AR096:4, AR164:4, AR172:4, AR274:4,
				AR166:4, AR039:4, AR269:4, AR104:4, AR272:4, AR169:4, AR225:4, AR206:4, AR069:4, AR275:4,
				AR261:4, AR173:4, AR290:4, AR213:4, AR233:4, AR226:3, AR312:3, AR267:3, AR290:3,
				AKZ5013, AKZ4513, AKZ1713, AK10113, AK30013, AK31113, AK1711, AK1711, AK24713, AK24513, AK31613, AK31613, AK31613, AK31613, AK30013, AK300
				ARCISIS, ARCESSIS, ARCOOS, ARCONS, ARCESSIS, ARSISIS, AR196:3, AR285:3, AR238:3,
				AR234:3, AR280:3, AR280:3, AR286:3, AR234:3, AR283:3, AR204:3, AR205:2, AR237:2,
				AR193;2, AR200;2, AR294;2, AR201;2, AR188;2, AR191;2, AR222;2, AR295;2, AR212;2, AR185;2,
				AR226:2, AR190:2, AR061:2, AR308:2, AR262:2, AR227:2, AR189:2, AR171:3, AR277:2, AR210:2,
				AR203:2, AR199:2, AR195:2, AR216:2, AR232:2, AR230:2, AK256:1, AK255:1, AK260:1, AK423:1,

				AR219:1. AR211:1. AR258:1, AR218:1 L0741:16, H0052:6, L0769:5, L0770:4, L0750:3, L0623:2, L0639:2,
				L0439.2, L0753.2, H0739.1, S0444.1, S6026.1, S0300.1, H0351.1, H0261.1, S0222.1, H0441.1, H0706.1,
				H0581:1, H0196:1, H0545:1, S0388:1, H0071:1, S0312:1, S0314:1, S0250:1, H0606:1, S0036:1, H0551:1,
				H0743:1, L0774:1, L0659:1, L4501:1, L0438:1, H0754:1, L0612:1, H0732:1, S3014:1, L0742:1, L0777:1,
				LU/32:1, LU/3/:1, SU03::1, LU32:1 and 11000/:1.
83	HCMTB45	862367	93	AR168:18, AR250:17, AR169:16, AR222:15, AR308:14, AR1/1:14, AR227:14, AR223:15, AR214:15,
				AR201:13, AR226:13, AR2225:12, AR224:11, AR206:12, AR197:11, AR197
				AR288:10, AR311:10, AR294:9, AR172:9, AR263:9, AR236:9, AR234:9, ARX10:3, ARX10:0, AR170:0,
				AR286:8, AR215:8, AR221:8, AR195:8, AR180:8, AR174:8, AR297:8, AR287:8, AR258:3, AR1887:8,
				AR181:7, AR188:7, AR176:7, AR261:7, AR255:7, AR246:7, AR242:7, AR200:7, AR235:7, AK245:7,
				AR162:7, AR260:7, AR254:7, AR161:7, AR203:7, AR163:7, AR163:7, AR213:6, AR165:6, AR053:6,
				AR164:6, AR269:6, AR173:6, AR243:6, AR190:6, AR166:6, AR272:6, AR229:6, AR293:6, AR193:6,
				AR240:6 AR312:6 AR089:6 AR198:5, AR210:5, AR239:5, AR266:5, AR309:5, AR296:5, AR177:5,
				AP238-5 AR187-5 AR316-5 AR228-5 AR104:5, AR055:5, AR231:5, AR295:5, AR291:5,
				APACES AP104.5 AP208-4 AP208-4 AP270-4 AR060-4 AP230-4 AR192-4,
				APA200.4 APA11.4 AP176.4 AP170.4 AR2737.4 AR253.4 AR313.4 AR277.4,
				ANZENCY, ANZELIA, ANZ
_				AK26/:4, AKU96:4, AK204:4, AK220:4, AK24/:3, AK300:3, AK050:3, AK20:3, AK206:3
				AR299:3, AR298:3, AR218:3, AR232:3, AR256:3, AR2/4:3, AR289:3, AR219:3, AR212:3, AR201:3,
				[AR292:2, AR205:2, AR061:2, AR202:2, AR248:2, AR344:2, AR314:2, AR178:2, AR259:2, AR273:1
				H0170:2, H0230:1, L0637:1, L0761:1, L0519:1 and L0545:1.
	HCMTB45	562034	638	
78	HCNSD03	630649	94	<u> AR189:9 AR161:7, AR162:7, AR163:7, AR060:7, AR176:7, AR165:6, AR164:6, AR240:6, AR166:6, </u>
5	COCKIONI	\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.		AR293:6. AR247:6. AR236:6. AR269:6. AR181:5. AR055:5. AR233:5. AR297:5. AR228:5.
				AR275:5, AR229:5, AR299:5, AR255:5, AR261:5, AR257:5, AR300:5, AR270:5, AR231:5, AR267:5,
				AR183:5 AR266:5, AR295:4, AR179:4, AR177:4, AR243:4, AR282:4, AR196:4, AR262:4, AR178:4,
				AR238:4, AR287:4, AR185:4, AR288:4, AR191:4, AR238:4, AR285:4, AR287:4, AR239:4, AR237:4,
				AR736-4 AR739-4 AR217-4 AR190-4, AR175-4, AR221-4, AR222-4, AR235-3, AR316-3, AR309-3,
				4R206:3, AR205:3, AR206:3, AR206:3, AR206:3, AR188:3, AR170:3, AR201:3, AR313:3,
				AR204:3, AR174:3, AR193:3, AR286:3, AR230:3, AR204:3, AR173:3, AR234:3, AR291:3, AR224:3,
				AR104:3, AR168:3, AR226:3, AR242:3, AR061:3, AR227:3, AR197:3, AR033:3, AR189:3, AR218:2,
				AR199-2 AR256-2 AR277:2 AR258-2 AR283:2, AR312:2, AR172:2, AR260:2, AR232:2, AR271:2,
				AR216:2, AR180:2, AR053:2, AR215:2, AR264:2, AR311:1, AR211:1, AR219:1, AR214:1 L3388:3,
				H0231:2 and L0532:1.
8	HCOOS80	1134974	95	AR313:38, AR277:30, AR039:29, AR300:24, AR299:24, AR283:23, AR089:22, AR218:21, AR316:21,
3				THE RESERVE THE PARTY OF THE PA

				AR096:21, AR219:20, AR104:19, AR185:19, AR282:17, AR240:16, AR055:13, AR060:12 L0754:4,
				H02201, L070112, L079-12, L070012, L070711, H055011, H0533:1, H0643:1, H0574:1, S0280:1, H0618:1, H0402:1, S0418:1, S0354:1, H0580:1, L0717:1, H0100:1, L3903:1, L5566:1, L0773:1, L0521:1, L0803:1, H0546:1, H054
	08300011	1045182	630	L0804:1, L0807:1, L0768:1, H0000:1, H0321:1, 30404:1, 30400:1, 110430:1, 2010:
	HCOOS80	1045183	8	
98	нсост05	911924	96	AR089.9, AR196.9, AR188.9, AR165.8, AR161.8, AR162.8, AR201.8, AR164.8, AR166.7, AR163.7,
				AR193:7, AR19/:1, AR203:0, AR204:0, AR150:0, AR170:0, AR271:0, AR200:5, AR200:5, AR246:5, AP203:5, AP203:5, AR206:5, AR2
			_	AR191-5 AR300:5, AR266:5, AR182:4, AR190:4, AR255:4, AR237:4, AR287:4, AR181:4, AR236:4,
				AR261:4, AR299:4, AR257:4, AR195:4, AR264:4, AR288:4, AR252:4, AR175:4, AR272:4, AR309:4,
				AR240:4, AR293:4, AR229:4, AR267:4, AR270:4, AR179:3, AR290:3, AR316:3, AR286:3, AR061:3,
				AR275:3, AR234:3, AR217:3, AR178:3, AR172:3, AR177:3, AR199:3, AR173:3, AR262:3, AR174:3,
				AR291:3, AR039:3, AR277:3, AR239:3, AR294:3, AR247:3, AR230:3, AR232:3, AR185:3, AR283:3,
				AR189:3, AR297:3, AR295:3, AR238:3, AR268:3, AR104:3, AR226:2, AR170:2, AR313:2, AR221:2,
_				AR260:2, AR053:2, AR285:2, AR225:2, AR227:2, AR289:2, AR096:2, AR311:2, AR216:2, AR223:2,
				AR274:2, AR218:2, AR210:2, AR171:2, AR308:2, AR033:2, AR296:2, AR258:2, AR312:2, AR256:2,
				AR243.2, AR235.1, AR211.1, AR168.1, AR192.1, AR213.1 S0356.4, H0596.2, H0032.2, H0685.1, S0442.1,
				H0270:1, H0156:1, H0046:1, H0622:1, L0483:1, H0674:1, S0440:1, L0372:1, L0364:1, L0805:1, L0663:1,
				S0374:1, S0434:1 and L0599:1.
	HCQCT05	906285	641	C C/, LT C C C C C C C C C C C C C C C C C C
87	HCUBS50	499240	6	AR180.5, AR238:4, AR232:3, AR239:3, AR237:3, AR169:2, AR215:2, AR274:2, AR178:2, AR102:2,
				AR163:2, AR270:2, AR221:2, AR164:2, AR161:2, AR264:2, AR282:2, AK309:2, AK291:2, AK210:2,
				AR089.2, AR205.2, AR243.2, AR104.1, AR196.1, AR269.1, AR293.1, AR240.1, AR261:1, AR212:1,
				AR231:1, AR277:1, AR210:1, AR096:1, AR300:1, AR311:1, AR258:1 H0306:1 and L0476:1.
88	HCUCK44	720291	86	AR172:3, AR245:3, AR252:3, AR161:3, AR164:3, AR166:3, AR221:2, AR162:2, AR163:2, AR169:2,
				[AR311:2, AR261:2, AR165:2, AR214:2, AR224:2, AR296:2, AR264:1, AR195:1, AR2//:1, AR212:1,
				AR217:1, AR096:1, AR193:1, AR295:1, AR287:1, AR216:1, AR213:1, AR257:1, AR275:1, AR089:1,
				AR201:1, AR282:1 L3450:19, H0271:18, S0002:12, L0794:12, S0144:8, L3783:8, L3807:8, H0250::/
				L0777:7, L3119:6, L3729:6, L0665:6, H0518:6, S0132:5, H0264:5, S0426:5, S0328:5, S0330:5, L0738:5,
				S0444:4, S0344:4, L0770:4, L0776:4, L0659:4, S0052:4, S0053:4, L0743:4, L0747:4, S0436:4, L0065:3,
				L0769:3, L0766:3, L0774:3, L0657:3, H0521:3, L0748:3, L0749:3, L0731:3, L2999:2, H0306:2, H0402:2,
				H0638:2, S0360:2, S0408:2, S0476:2, H0393:2, S0278:2, L3516:2, H0050:2, H0014:2, H0416:2, H0017:2,

				H0634:2, H0494:2, S0440:2, L0800:2, L0771:2, L0648:2, L0549:2, L0806:2, L0805:2, L0666:2, S0428:2,
	1			S0216:2, L3210:2, S0404:2, L0439:2, L0740:2, L0750:2, L0752:2, L0596:2, L0599:2, 10002:1, H0159:1, H0650:1, H0650:1, H0650:1, L3117:1, H0650:1, H0650:1, L3646:1, H0741:1, L3117:1,
				H0619:1, L2791:1, H0613:1, H0600:1, H0592:1, H0486:1, L2504:1, L3750:1, H0069:1, H0581:1, H0596:1,
		-		H0044:1, H0009:1, H0024:1, H0057:1, S0051:1, H0355:1, H0615:1, L0483:1, S0036:1, H0090:1, H0038:1,
				H0087:1, H0413:1, H0100:1, S0448:1, S0142:1, S0210:1, H0529:1, L3904:1, L0761:1, L077:1, L057:1,
_				L0646:1, L0645:1, L0764:1, L0773:1, L0662:1, L0783:1, L0348:1, L0348:1, L0331:1, L0330:1, L0833:1, L0803:1, L08
				H0658:1, S0378:1, H0710:1, S0152:1, H0696:1, H0704:1, S0406:1, H0436:1, L0744:1, L0756:1, L0779:1,
		•		L0780:1, L0755:1, L0759:1, S0031:1, L0581:1, L0601:1, L0603:1, S0196:1, L3632:1 and H0352:1.
88	HCUE060	499242	66	AR313:24, AR242:23, AR192:19, AR162:19, AR161:18, AR163:17, AR039:16, AR089:15, AR165:15,
				AR164:15, AR198:15, AR300:15, AR166:14, AR252:14, AR104:14, AR096:13, AR250:13, AR183:12,
				AR174:12, AR053:12, AR254:12, AR204:12, AR270:12, AR212:12, AR240:11, AR233:11, AR197:11,
				AR205:11, AR264:10, AR312:9, AR193:9, AR229:9, AR201:9, AR234:9, AR247:9, AR177:9, AR253:9,
				AR183:9, AR283:9, AR245:8, AR226:8, AR275:8, AR266:8, AR274:8, AR243:8, AR213:7, AR207:7,
				AR263:7, AR272:7, AR246:7, AR239:7, AR316:7, AR173:7, AR262:7, AR299:7, AR060:7, AR195:7,
				AR238:7, AR179:6, AR308:6, AR293:6, AR271:6, AR309:6, AR231:6, AR282:6, AR297:6, AR269:5,
				AR176:5, AR294:5, AR311:5, AR277:5, AR232:5, AR237:5, AR230:5, AR255:4, AR295:4, AR296:4,
				AR181:4, AR033:4, AR289:4, AR257:4, AR267:4, AR055:4, AR268:3, AR224:3, AR199:3, AR061:3,
				AR196:3, AR215:3, AR288:3, AR258:3, AR168:3, AR236:3, AR235:3, AR221:2, AR290:2, AR182:2,
				AR261:2, AR175:2, AR286:2, AR214:2, AR222:2, AR180:2, AR178:1, AR189:1, AR291:1, AR216:1,
				AR169:1 H0402:1
8	HCUGM86	847040	100	AR221:6, AR192:6, AR252:4, AR282:4, AR170:4, AR213:3, AR242:3, AR283:3, AR193:3, AR096:2,
				AR295:2, AR309:2, AR243:2, AR274:2, AR313:2, AR181:2, AR164:2, AR223:2, AR226:2, AR201:2,
				AR272:2, AR166:2, AR216:2, AR271:2, AR172:1, AR224:1, AR171:1, AR230:1, AR089:1, AR217:1,
				AR286:1, AR275:1, AR161:1, AR228:1, AR258:1, AR163:1, AR311:1, AR162:1, AR180:1, AR205:1,
				AR168:1, AR288:1, AR277:1 H0402:1, H0779:1 and L0747:1.
16	нстик65	651313	101	AR313:16, AR089:15, AR039:14, AR096:11, AR312:10, AR185:10, AR104:9, AR277:8, AR316:8, AR299:8,
:				AR263:7, AR310:7, AR240:6, AR060:6, AR309:5, AR033:5, AR296:5, AR300:5, AR282:4, AR192:4,
				AR186:4, AR274:3, AR175:3, AR219:3, AR055:3, AR284:3, AR218:3, AR267:3, AR294:3, AR177:2,
				AR246:2, AR182:2, AR293:2, AR241:2, AR268:2, AR292:2, AR270:2, AR266:2, AR295:2, AR290:2,
			-	AR285:2, AR283:2, AR183:1, AR232:1, AR289:1, AR052:1, AR238:1, AR286:1, AR053:1, AR233:1,
				AR269:1, AR061:1, AR206:1, AR259:1 H0543:18, S0414:11, L0438:6, S0412:6, L0747:5, L0439:4, L0750:4,
				L0779;4, L0759;4, L0592;4, H0156;3, L0758;3, H0423;3, H0402;2, H0251;2, L0770;2, L0809;2, L0777;2,

				H0542:2, H0422:2, H0624:1, H0170:1, S0114:1, S0420:1, S0007:1, S6026:1, H0351:1, S6016:1, H0013:1, L0021:1, H0575:1, S0346:1, L0157:1, T0010:1, H0354:1, S6028:1, S0036:1, H0038:1, L3905:1, L0794:1, L0804:1, L0787:1, L0666:1, H0658:1 and L0742:1.
	HCUHK65	880178	642	
92	HCUIM65	550208	102	AR223:4, AR215:3, AR268:3, AR270:3, AR250:3, AR161:3, AR246:3, AR162:3, AR160:2, AR171:2, AR243:3, AR243:2, AR243:2, AR243:2, AR243:2, AR269:2, AR268:1,
				AR313:1, AR179:1, AR205:1, AR309:1, AR165:1, AR163:1, AR170:1, AR261:1, AR225:1, AR195:1,
				AR240:1, AR181:1, AR238:1, AR193:1, AR299:1 L0789:4, L0809:2, L0759:2, L0596:2, H0306:1, H0402:1,
				H0580:1, H0550:1, H0370:1, H0404:1, H0559:1, H0486:1, H0031:1, H06/4:1, H0153:1, H0100:1, L0800:1, L08
				19431, LUSU4:1, LUSU3:1, LU313:1, LU763:1, IROJ2:1, LO77:1, IROJ2:1, LU304:1, LUSU4:1, LU304:1, LU304:
93	HCWEB58	1352416	103	ARI/1:4, AR309:3, AR222:3, AR210:3, AR200:3, AR200:2, AR300:2, AR105:1, AR102:1, AR261:1, AR261:1,
				AR178:1, AR257:1, AR277:1, AR172:1, AR196:1, AR161:1, AR162:1, AR183:1, AR271:1, AR270:1,
				AR198:1, AR272:1, AR216:1, AR253:1, AR194:1 H0622:8, L0794:7, L0747:7, H0024:6, S0126:6, H0539:6,
				S0028:6, L0759:6, H0545:5, H0123:4, L0809:4, L0748:4, L0439:4, H0170:3, H0046:3, H0620:3, H0252:3,
				H0039-3, L0564-3, L0769-3, H0547-3, L0743-3, L0755-3, L0599-3, H0208-2, H0013-2, H0251-2, H0597-2,
				L0471:2, H0628:2, H0551:2, L0804:2, L0542:2, L0787:2, H0144:2, H0519:2, H0651:2, H0521:2, L0744:2,
				L0750:2, L0731:2, L0593:2, L0595:2, H0171:1, S0342:1, S0212:1, H0255:1, H0664:1, L3421:1, H0177:1,
				H0305.1, S0420.1, S0358.1, S0360.1, L3646.1, H0645.1, L0717.1, H0550.1, H0438.1, T0112.1, H0427.1,
				L0021:1, H0575:1, H0327:1, H0546:1, H0041:1, H0050:1, H0011:1, H0292:1, H0032:1, H0116:1, S0352:1,
				H0646:1, S0142:1, L0631:1, L0770:1, L0637:1, L0772:1, L0800:1, L0773:1, L0648:1, L0521:1, L0662:1,
				L0649:1, L0803:1, L0775:1, L0375:1, L0805:1, L0659:1, L0783:1, L0666:1, L0565:1, H0726:1, L2670:1,
				L2686:1, H0520:1, H0684:1, H0672:1, H0522:1, S0044:1, S0032:1, L0751:1, L0749:1, H0445:1, S0434:1,
				L0605:1, H0653:1, S0276:1, S0196:1 and H0352:1.
	HCWEB58	1115089	643	
	HCWEB58	889268	644	3.00041 3.00041 3.00041
94	HCWGU37	1042325	19	AR165:7, AR164:6, AR166:6, AR313:6, AR161:5, AR162:5, AR163:5, AR089:5, AR203:5, AR039:5,
			-	AR252:4, AR173:4, AR275:4, AR178:3, AR185:3, AR212:3, AR246:3, AR206:3, AR2
				AR223:3, AR196:3, AR096:3, AR247:3, AR192:3, AR162:3, AR1/9:3, AR254:3, AR195:3, AR056:3
				AR312:3, AR229:3, AR104:3, AR222:3, AR282:3, AR060:3, AR297:3, AR1103:3, AR203:2, AR203:2,
				AR257:2, AR285:2, AR308:2, AR175:2, AR291:2, AK261:2, AK21/1:2, AK191:2, AK210:2, AK310:2,
				AR255:2, AR272:2, AR258:2, AR316:2, AR182:2, AR201:2, AR207:2, AR237:2, ARZ013:4, AK286:2,
				AR246:2, AR233:2, AR231:2, AR296:2, AR290:2, AR236:2, AR264:2, AR199:2, AR188:2, AR288:1,
				AR293:1, AR295:1, AR299:1, AR205:1, AR181:1, AR287:1, AR214:1, AR294:1, AR232:1, AR236:1,

				AR033:1, AR228:1, AR226:1, AR267:1, AR219:1, AR239:1, AR211:1 H0589:60, S0042:29, H0402:3, H0305:3, L0770:2, S0052:2, L0744:2, L0740:2, H0438:1, H0051:1, S0038:1, S0386:1, H0521:1, L0743:1, L0779:1 and L0366:1.
	HCWGU37	901913	645	
95	HCWKC15	553621	105	AR313:9, AR164:8, AR165:8, AR166:8, AR163:7, AR161:7, AR162:7, AR089:6, AR039:5, AR173:5, AR096:5, AR180:5, AR192:4, AR263:4, AR299:4, AR282:4, AR242:4, AR053:4, AR178:4, AR175:4, AR175:4,
-				AR247:4, AR269:4, AR296:4, AR257:3, AR212:3, AR174:3, AR240:3, AR202:3, AR190:3, AR279:3, AR279:3, AR311:3, AR312:3, AR234:3, AR239:3, AR199:3, AR243:3, AR264:3, AR185:3, AR300:3, AR179:3, AR311:3,
				AR191:3, AR293:3, AR181:3, AR272:3, AR297:3, AR213:3, AR171:3, AR270:3, AR183:3, AR258:3, AR2
				AR104:2, AR233:2, AR172:2, AR193:2, AR197:2, AR291:2, AR231:2, AR188:2, AR219:2, AR255:2,
				AR275:2, AR189:2, AR237:2, AR290:2, AR295:2, AR287:2, AR277:2, AR218:2, AR267:2, AR182:2,
				AR228:2, AR268:2, AR204:2, AR190:2, AR246:2, AR239:2, AR232:2, AR261:2, AR223:2, AK201:2,
			_	AR217:2, AR195:2, AR260:1, AR200:1, AR170:1, AR286:1, AR216:1, AR288:1, AR222:1, AR222:1, AR2217:1,
96	HCWI D74	628256	106	AR268:4, AR243:3, AR270:3, AR180:3, AR171:3, AR282:3, AR162:3, AR254:3, AR252:2, AR039:2,
₹				AR204:2, AR238:2, AR161:2, AR170:2, AR269:2, AR267:2, AR257:2, AR210:2, AR168:2, AR262:2,
				AR053:2, AR183:2, AR299:2, AR290:1, AR224:1, AR311:1, AR309:1, AR258:1, AR277:1, AR289:1,
				AR178:1, AR217:1, AR228:1, AR312:1, AR172:1, AR293:1, AR164:1, AR089:1, AR185:1, AR205:1,
				AR166:1, AR163:1, AR313:1, AR295:1, AR201:1 H0305:3 and H0589:1.
97	HDHEB60	499233	107	AR195:10, AR245:9, AR242:9, AR309:9, AR196:8, AR192:8, AR225:8, AR198:8, AR207:8, AR246:8,
				AR169:8, AR170:8, AR223:8, AR224:7, AR214:7, AR039:7, AR172:7, AR215:7, AR201:7, AR222:7,
			-	AR193:7, AR205:7, AR221:7, AR199:7, AR272:7, AR168:7, AR089:7, AR213:6, AR263:6, AR165:6,
				AR216:6, AR164:6, AR274:6, AR217:6, AR261:6, AR053:6, AR166:6, AR055:6, AR312:6, AR308:6,
				AR197:6, AR283:5, AR240:5, AR282:5, AR171:5, AR253:5, AR235:5, AR311:5, AR295:5, AR250:5,
_	-			AR275:5, AR243:5, AR291:5, AR162:5, AR297:5, AR264:5, AR313:5, AR288:5, AR316:5, AR204:5,
				AR163:5, AR299:5, AR161:5, AR257:5, AR286:5, AR271:5, AR189:5, AR236:5, AK210:5, AK177:5,
				AR060:4, AR212:4, AR033:4, AR285:4, AR188:4, AR200:4, AR174:4, AR287:4, AR096:4, AR296:4,
				AR258:4, AR175:4, AR218:4, AR176:4, AR293:4, AR180:4, AR191:4, AR203:4, AR219:4, AR289:4,
-				AR277:4, AR256:4, AR183:4, AR190:4, AR247:4, AR300:4, AR181:3, AR269:3, AR173:3, AR262:3,
				AR238:3, AR268:3, AR178:3, AR185:3, AR255:3, AR270:3, AR294:3, AR266:3, AR211:3, AR260:3,
				AR229:3, AR104:3, AR231:3, AR267:3, AR239:3, AR290:3, AR182:3, AR226:3, AK232:3, AK061:2,
				AR233:2, AR237:2, AR227:2, AR234:2, AR179:2, AR230:2, AR228:2 H0265:2, S0442:2, S0360:2, H0381:2,
				H0052:2, H0570:2, H0087:2, L0439:2, H0445:2, H0650:1, 50354:1, F10560:1, F10741:1, F10560:1, F10560:1, F10560:1,

				H0486:1, L0021:1, H0618:1, H0009:1, H0571:1, S0051:1, S0368:1, H0553:1, H0181:1, H0551:1, S0294:1,
				L3905:1, L0646:1, L0764:1, L0662:1, L0794:1, L0658:1, L0659:1, L0665:1, H0347:1, H082:1, H0882:1, L0662:1, L0679:1, L0658:1, L0659:1, L0663:1, H0347:1, H0882:1, L0662:1, L0663:1, L0663:1, H0347:1, H0882:1, L0663:1, L0663:1, L0663:1, H0347:1, H0882:1, L0663:1, L066
80	HDHIA94	765171	108	AR202:35, AR194:33, AR224:27, AR281:26, AR207:26, AR263:23, AR195:23, AR222:23, AR206:22,
₹				AR205:22, AR265:22, AR241:22, AR315:21, AR244:21, AR246:21, AR280:20, AR223:20, AR222:27, AR222:27,
				AR264:19, AR192:19, AR214:18, AR235:18, AR2525:18, AR265:16, AR310:16, AR192:19, AR213:16
				AR314:17, AR311:16, AR197:16, AR308:16, AR162:16, AR165:16, AR309:10, AR304:16, AR243:14,
				AR164:16, AR163:16, AR273:15, AR212:15, AR245:15, AR100:15, AR275:15, AR272:15, EXECUTE: 3, AR164:16, AR16
				AR271:14, AR053:14, AR169:14, AR196:14, AR215:14, AR177:13, AR267:13, AR289:12, AR204:12,
				AR201:13, AR284:13, AR172:13, AR242:13, AR217:13, AR262:13, AR266:11, AR247:11, AR292:11,
				AR193:12, AR2//:12, AR039:12, AR291:12, AR170:12, AR186:11, AR216:11, AR215:10, AR285:10,
				AK236:11, AK20111, AK10111, AK101111, AK101111, AK101111, AK10111, AK101110, AK10110, AK294:10,
				AKZ40:10, AK199:10, AK222:10, AK212:10, AK299:9, AK286:9, AR189:9, AK191:9, AK270:9, AK253:9,
				ARZ20.10, ARZ20.10; ARZ20.10; ARZ20.10; ARZ20.20; ARZ60.8, ARZ20.8, ARZ20.8, ARZ20.8, ARZ20.8, ARZ20.8, ARZ20.8,
				AR220:3, AR315:3, AR220:3, AR316:8, AR316:8, AR38:8, AR182:8, AR185:7, AR229:7, AR262:7,
				AR254:7, AR210:7, AR226:7, AR227:7, AR055:7, AR061:7, AR178:7, AR287:7, AR203:7, AR188:7,
				AR200:7, AR267:7, AR237:7, AR260:7, AR257:7, AR234:7, AR231:7, AR173:7, AR248:6, AR249:6,
				AR239:6, AR233:6, AR218:6, AR060:6, AR290:6, AR230:6, AR190:6, AR219:6, AR255:6, AR228:3,
				AR179:5 L0439:5, L0777:3, S0474:2, L0769:2, L0637:2, L0438:2, H0539:2, L0731:2, S0010:1, L0137:1,
			_	H0571:1, L0351:1, L0520:1, L0703:1, L5500:1, L6773:1, L6570:1, L637:1:1, L6351:1, L0351:1, L0520:1, L6351:1, L677:1, L
	HDHIA94	637576	646	APITOR APITOR APITOR APITOR APITOR APITOR
66	HDHIMA45	902513	109	AR225.9, AR277.8, AR214.8, AR223.8, AR215.8, AR165.1, AR1/1.1, AR104.9, AR277.8, AR217.5
				AR166:6, AR224:6, AR222:6, AR235:6, AR1/2:6, AR102:3, AR210:3, AR2
				AR264:5, AR163:5, AR297:5, AR221:5, AR288:5, AR180:5, AR311:5, AR207:4, AR201:4, AR201:4,
				AR253:4, AR178:4, AR287:4, AR252:4, AR183:3, AR1/6:3, AR172:3, AR2000:3, AR253:4, AR178:4
				AR309:3, AR089:3, AR240:3, AR308:3, AR289:3, AR181:3, AR196:3, AR1/3:3, AR263:3, AR263:3,
				AR239;3, AR262;3, AR295;3, AR316;3, AR233;3, AR296;3, AR2201;3, AR286;3, AR312;3,
				AR195:3, AR228:3, AR299:3, AR213:3, AR234:3, AR191:3, AR293:3, AR238:3, AR294:3, AR096:3,
				AR104:3, AR247:3, AR229:3, AR300:3, AR184:3, AR266:3, AR242:3, AR271:3, AR211:2, AR109:2,
				AR255;2, AR245;2, AR236;2, AR313;2, AR231;2, AR258;2, AR269;2, AR201;2, AK268;2, AK198;2,
				AR233:2, AR039:2, AR260:2, AR179:2, AR174:2, AR190:2, AR230:2, AR055:2, AR175:2, AR290:2,
				AR275:2, AR185:2, AR033:2, AR177:2, AR189:2, AR270:2, AR210:2, AR205:2, AR227::, AK188:2,
				AR253:2, AR243:2, AR267:2, AR182:2, AR226:2, AR310:2, AR2/4:2, AR202:2, AR413:1, AR412:1,

				AR199:1, AR053:1, AR237:1, AR254:1, AR218:1, AR061:1, AR256:1, AR265:1, AR292:1, AR193:1,
1		1,750.0	147	AR284:1 L0/94:5, L0/69:4, L0/49:5, 50110:1, f105/2:1, f10050:1, E0/55:1, E0
	HDHMA45	812/04	ğ	ABJEAS ADJOS ADJOS ADJOS ADJOS ADJOS ADJOS ADJOS ADJOS ADJOS A
100	HDHIMA72	547772	110	AR184:7, AR254:6, AR265:6, AR207:6, AR253:3, AR103:3, AR222:3, AR157:3, AR157:3, AR180:4, AR1
				AK100:3, AK102.3, AK101.3, AK270:3, MISSO:4, AR312:4, AR274:4, AR271:4, AR196:4,
				AR193.4 AR261:3 AR275:3 AR217:3 AR183:3, AR178:3, AR290:3, AR194:3, AR282:3, AR309:3,
				AR284:3, AR213:3, AR169:3, AR186:3, AR215:3, AR289:3, AR268:3, AR297:3, AR175:3, AR171:3,
				AR245:3, AR291:3, AR033:3, AR267:3, AR257:3, AR288:3, AR182:3, AR188:3, AR201:3, AR191:3,
				AR292.3. AR241.3. AR294.3. AR221.3, AR293.3, AR206.3, AR104.3, AR205.3, AR214.3, AR198.3,
				AR238.3 AR216.3 AR189.2. AR263.2, AR199.2, AR295.2, AR246.2, AR226.2, AR089.2, AR251.2,
				AR185.2, AR296.2, AR173.2, AR273.2, AR223.2, AR240.2, AR255.2, AR237.2, AR249.2, AR190.2,
				AR172.2, AR287.2, AR299.2, AR277.2, AR286.2, AR096.2, AR285.2, AR200.2, AR232.2, AR060.2,
				AR203:2, AR298:2, AR181:2, AR236:2, AR174:2, AR219:2, AR262:2, AR239:2, AR247:2, AR229:2,
				AR258:2, AR316:2, AR313:2, AR300:2, AR179:2, AR260:2, AR225:2, AR310:2, AR234:2, AR243:2,
				AR052:1, AR231:1, AR039:1, AR168:1, AR210:1, AR176:1, AR266:1, AR218:1, AR259:1, AR233:1,
				AR227:1, AR177:1, AR24:1, AR281:1, AR061:1, AR256:1, AR283:1 L0766:4, L0438:4, H0575:3,
				H0050:3, L0770:3, L0757:3, L0758:3, H0556:2, H0013:2, T0110:2, H0572:2, L0803:2, S0126:2, L0439:2,
				S0408:1, S0132:1, H0619:1, S6016:1, L3816:1, L3503:1, L3653:1, H0266:1, S0250:1, H0615:1, H0428:1,
				H0039:1, S0036:1, H0591:1, H0040:1, H0616:1, H0056:1, T0041:1, L0769:1, L0637:1, L0794:1, L0804:1,
				L0805:1, L5622:1, L0666:1, L2653:1, H0648:1, H0539:1, S0152:1, H0696:1, S0406:1, S0028:1, L0748:1,
				L0740:1, L0756:1, L0780:1, L0752:1, L0592:1 and L0096:1.
101	HDLAC10	692299	111	AR225:4, AR215:4, AR282:4, AR192:3, AR235:3, AR171:3, AR242:3, AR169:3, AR246:2, AR264:2,
				AR162:2, AR172:2, AR089:2, AR240:2, AR205:2, AR311:2, AR213:2, AR204:1, AR168:1, AR222::1,
				AR163:1, AR060:1, AR230:1, AR257:1, AR299:1, AR297:1, AR313:1, AR226:1, AR096:1, AR236:1,
				AR272:1, AR223:1, AR178:1, AR224:1, AR295:1 L0766:4, L0438:4, H0038:3, L0666:3, L0777:3, H0445:3,
				H0624;2, H0170;2, H0341;2, S0212;2, H0661;2, S0003;2, H0615;2, H0031;2, H0068;2, L0804;2, H0519;2,
				H0555;2, L0743;2, L0745;2, L0779;2, L0411;1, H0171;1, S0342:1, S0134;1, S0218;1, H0650;1, H0657;1,
				L0005:1, S0358:1, S0360:1, S0007:1, S0046:1, H0550:1, H0586:1, H0485:1, H0486:1, T0060:1, H0599:1,
				H0318:1, H0581:1, H0320:1, H0373:1, H0266:1, S0214:1, H0328:1, H0428:1, S0366:1, H0551:1, 10067:1,
				H0494:1, S0002:1, H0529:1, L0638:1, L0761:1, L0667:1, L0374:1, L0764:1, L0803:1, L0655:1, L0606:1,
				L0635:1, L0665:1, S0374:1, H0690:1, H0658:1, H0672:1, H0539:1, H0518:1, S0406:1, S0028:1, L0439:1,
				L0755:1, L0759:1, S0308:1, L0599:1, S0026:1, H0667:1, H0543:1, H0423:1 and H0422:1.
182	HDI A028	890457	112	AR254:7, AR264:5, AR162:4, AR161:4, AR213:4, AR163:4, AR196:4, AR212:4, AR246:3, AR311:3,
701	110000	222		

AR178:3, AR272:3, AR175:3, AR235:3, AR193:3, AR189:3, AR190:3, AR250:3, AR269:3, AR288:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR165:2, AR166:2, AR224:2, AR173:2, AR255:2, AR174:2, AR271:2, AR296:2, AR297:2, AR285:2, AR183:2, AR256:2, AR262:2, AR262:2, AR268:2, AR268:2, AR268:2, AR263:2, AR286:2, AR286:2, AR286:2, AR286:2, AR286:2, AR286:2, AR286:2, AR286:1, AR263:1, AR263:1, AR185:1, AR263:1, AR263:1, AR168:1, AR228:1, AR199:1, AR270:1, AR270:1, AR277:1, AR299:1, AR177:1, AR238:1, AR168:1, AR228:1, AR299:1, AR26:1, H0688:1, H0622:1, H0032:1, H0090:1, L0637:1, L0776:1, L0789:1, L0788:1, L0663:1, L0663:1, L0663:1, L0663:1, L076:1, L0760:1, L0777:1, L0780:1, L0788:1, L0603:1, L0693:1, L0663:1, L0392:1, L0392	AR249:72, AR213:48, AR253:40, AR096:37, AR052:37, AR263:33, ARU33:32, AK212:31, AKZ03:21, ARZ249:72, AR254:26, AR264:22, AR248:18, AR251:17, AR240:17, AR313:16, AR268:14, AR272:13, AR290:13, AR311:13, AR310:13, AR177:13, AR180:13, AR245:10, AR245:10, AR250:10, AR309:10, AR290:13, AR311:13, AR310:13, AR177:13, AR309:9, AR246:13, AR245:10, AR250:10, AR309:10, AR275:10, AR183:9, AR247:9, AR272:10, AR310:13, AR310:13, AR312:9, AR309:9, AR243:7, AR175:6, AR193:6, AR193:6, AR193:6, AR273:6, AR192:6, AR192:6, AR192:6, AR192:6, AR284:5, AR282:5, AR284:5, AR282:5, AR282:3, AR282:3, AR282:4, AR282:4, AR282:3, AR282:2, AR282:2, AR282:3, AR282:2, AR282:2, AR282:2, AR282:2, AR282:2, AR282:2, AR282:2, AR282:2, AR282:2, AR282:3, AR282:2, AR282:3, AR282:2, AR282:3, AR282:2, AR282:3, AR282:1,	11. AP 164:12 AP 215:12 AP 216-13	AR313:21, AR281:12, AR039:12, AR314:12, AR241:12, AR090:12, AR2313:12, AR287:11, AR039:13, AR280:11, AR280:10, AR300:10, AR263:10, AR249:9, AR194:9, AR194:9, AR247:9, AR265:9, AR052:8, AR184:8, AR089:8, AR312:8, AR310:8, AR229:8, AR218:7, AR293:7, AR238:7, AR289:7, AR286:7, AR289:7, AR286:7, AR286:6, AR165:6, AR033:6, AR270:6, AR178:6, AR104:6, AR248:6, AR175:6,
	113	648	114
	1062783	866429	1352298
	HDPBA28	HDPBA28	HDPBQ02
	103		104

the state of the s

AR282:6, AR177:6, AR185:6, AR053:5, AR269:5, AR240:5, AR251:5, AR225:5, AR244:5, AR285:5, AR258:5, AR258:5, AR258:5, AR283:4, AR285:4, AR198:4, AR283:4, AR283:4, AR283:4, AR283:4, AR283:4, AR294:4, AR286:3, AR295:3, AR253:3, AR179:3, AR277:3, AR275:3, AR309:3, AR186:3, AR294:4, AR234:3, AR286:3, AR290:3, AR207:3, AR236:3, AR289:3, AR201:2, AR201:2, AR266:2, AR060:2, AR061:2, AR206:1, AR206:1, AR163:1, AR211:1, AR232:2, AR213:2, AR211:1, AR2	AC-SACA AC-ANCAA OC-SACAA SC 10:25	AR281:64, AR202:46, AR280:44, AR315:42, AR514:41, AR194:51, AR202:51, AR273:19, AR273:19, AR273:19, AR273:13, AR244:122, AR244:121, AR246:21, AR292:20, AR284:20, AR251:19, AR273:19, AR273:19, AR264:123, AR244:121, AR246:11, AR192:11, AR052:11, AR198:13, AR243:15, AR298:15, AR298:15, AR298:11, AR186:11, AR186:11, AR184:11, AR184:11, AR192:11, AR300:13, AR277:11, AR218:11, AR204:11, AR204:12, AR166:3, AR206:3, AR160:3, AR206:3, AR170:3, AR206:3, A		1.03601 1.03601 1.103601 1.20201 1.20201 1.0061	AR060:2, AR055:2, AR282:2 H0521:2, H0445:2, H0394:1, H0/4/:1, H0381:1, L0/01:1 and L0/20:1:	AR215:26, AR214:25, AR263:23, AR197:22, AR207:22, AR217:15, AR133:15, AR214:25
	649	115	650	651	116	117
	745403	1160316	727200	290988	460682	837699
	HDPBQ02	HDPBQ71	HDPBQ71	HDPBQ71	HDPC025	HDPCY37
		105			106	107

.. .--- - ...

AR222:18, AR168:18, AR269:17, AR243:17; AR216:16, AR172:16, AR264:16, AR225:16, AR171:16, AR222:16, AR223:16, AR221:15, AR261:15, AR261:13, AR262:13, AR262:11, AR262:10, AR262:11, AR262:	10,00001 10,1001 00,0000	AR194;31, AR202;28, AR198:25, AR205;24, AR206;24, AR281;24, AR246;22, AR244;21, AR205;21, AR315;20, AR241;19, AR192;19, AR243;19, AR282;18, AR033;17, AR280:17, AR265;17, AR275;16, AR283:16, AR273:15, AR204;15, AR285;14, AR291;14, AR297;14, AR296;14, AR247;14, AR039;14, AR314;13, AR284;13, AR240;13, AR289;13, AR296;13, AR296;13, AR298;12, AR104;12, AR314;13, AR284;13, AR284;11, AR286;11, AR089;12, AR060;12, AR055;11, AR186;11, AR182;11, AR286;11, AR286;	AR250:5, AR263:5, AR216:4, AR176:4, AR172:3, AR225:3, AR183:5, AR109:5, AR21:5, AR27:5, AR165:3, AR164:3, AR166:3, AR184:3, AR168:2, AR311:2, AR053:2, AR230:2, AR264:2, AR223:2,
<u> </u>	652		119
	604114	588697	704067
	HDPCY37	НDРFF39	HDPGK25
		108	109

.

				AR246:6, AR224:6, AR197:5, AR308:5, AR272:5, AR214:5, AR275:5, AR222:5, AR253:5, AR176:5,
				AR261:5, AR295:5, AR291:5, AR171:5, AR218:5, AR221:5, AR219:5, AR188:5, AR165:5, AR096:5, AR261:5, AR261:5, AR261:5, AR261:5, AR261:5, AR260:4, AR2
				AR183:4, AR201:4, AR257:4, AR169:4, AR312:4, AR316:4, AR039:4, AR274:4, AR190:4, AR191:4,
				AR181:4, AR178:4, AR236:4, AR216:4, AR180:4, AR205:4, AR210:4, AR270:4, AR170:4, AR277:4,
				AR243:4, AR235:4, AR212:4, AR104:4, AR199:4, AR189:4, AR242:4, AR213:4, AR255:4, AR289:4,
				AR174:3, AR285:3, AR230:3, AR286:3, AR297:3, AR299:3, AR283:3, AR313:3, AR204:3, AR287:3,
				AR173:3. AR247:3, AR229:3, AR269:3, AR286:3, AR182:3, AR293:3, AR266:3, AR258:3, AR198:3,
				AR237:3, AR262:3, AR033:3, AR239:3, AR185:3, AR231:3, AR203:3, AR200:3, AR179:3, AR211:3,
				AR227:3, AR268:3, AR267:3, AR294:3, AR290:3, AR234:3, AR232:3, AR226:3, AR300:2, AR250:2,
				AR282:2, AR256:2, AR061:2, AR053:2, AR233:2, AR260:2, AR228:2, AR055:2 H0521:1
= 2	HDPIF37	704487	122	AR215:15. AR225:14, AR253:11, AR213:10, AR221:9, AR223:9, AR217:8, AR196:8, AR311:8, AR212:8,
:				AR214:8. AR218:7, AR250:7, AR053:7, AR309:7, AR270:7, AR216:7, AR291:7, AR096:7, AR219:7,
				AR254:7, AR165:7, AR263:7, AR164:7, AR161:7, AR162:7, AR269:6, AR172:6, AR163:6, AR224:6,
		_		AR183:6, AR264:6, AR268:6, AR089:6, AR240:6, AR297:6, AR180:6, AR199:6, AR173:6, AR313:5,
				AR290:5, AR308:5, AR246:5, AR222:5, AR168:5, AR197:5, AR039:5, AR299:5, AR191:5, AR275:5,
				AR261:5, AR262:5, AR316:5, AR285:5, AR175:5, AR229:5, AR300:5, AR282:5, AR267:5, AR174:5,
				AR295:5, AR207:5, AR255:5, AR195:5, AR169:5, AR293:5, AR312:5, AR176:5, AR272:5, AR243:5,
				AR287:4, AR205:4, AR181:4, AR189:4, AR247:4, AR170:4, AR257:4, AR192:4, AR245:4, AR188:4,
				AR266:4, AR277:4, AR177:4, AR271:4, AR200:4, AR193:4, AR236:4, AR179:4, AR182:4, AR294:4,
				AR296:4, AR060:4, AR210:4, AR286:4, AR288:4, AR211:4, AR178:3, AR289:3, AR166:3, AR190:3,
				AR171:3, AR033:3, AR238:3, AR231:3, AR185:3, AR234:3, AR201:3, AR198:3, AR230:3, AR283:3,
				AR227:3, AR226:3, AR237:3, AR274:3, AR104:3, AR232:3, AR260:3, AR203:3, AR204:2, AR233:2,
				AR235:2, AR258:2, AR061:2, AR055:2, AR228:2, AR239:2, AR256:1 L0803:2, H0521:2, L0754:2,
				H0657:1, S0001:1, H0661:1, S0444:1, S0045:1, S0278:1, H0253:1, H0581:1, H0572:1, H0050:1, L0055:1,
				+0.0412.1, +0.042.1, +0.0625.1, +0.044.1, +0.0662.1, +0.0653.1, +0.0789.1, +0.0666.1, +0.0520.1, +0.0152.1, +0.0777.1 and
				L0731:1.
=======================================	HDPJM30	879325	123	AR268:8, AR289:6, AR184:6, AR266:5, AR252:5, AR223:5, AR169:5, AR290:4, AR286:4, AR224:4,
				AR194:4, AR257:4, AR214:4, AR310:4, AR270:4, AR165:4, AR294:3, AR291:3, AR222:3, AR183:3,
				AR235:3, AR215:3, AR282:3, AR284:3, AR297:3, AR267:3, AR260:3, AR217:2, AR262:2, AR182:2,
				AR258:2, AR309:2, AR172:2, AR288:2, AR298:2, AR225:2, AR269:2, AR296:2, AR176:2, AR248:2,
				AR166:2, AR216:2, AR250:2, AR292:2, AR164:2, AR263:2, AR162:2, AR287:2, AR255:2, AR053:2,
				AR061:2, AR249:2, AR163:2, AR293:2, AR285:2, AR253:2, AR312:2, AR178:2, AR313:2, AR277:2,
				AR256:2, AR205:2, AR052:1, AR203:1, AR238:1, AR274:1, AR171:1, AK295:1, AK231:1, AK247:1,

				AR206:1, AR181:1, AR221:1, AR226:1, AR230:1, AR179:1, AR283:1, AR232:1, AR230:1, AR239:1,
				AR243:1, AR237:1, AR133:1, AR226:1, AR240:1, AR237:1, AR246:1, AR246:1, AR133:1, AR133:1, AR133:1, AR133:1, AR233:1, AR889:1, AR177:1 L0800:4, H0617:3, H0521:3, L0070:3, L0742:3, L0770:2, L0771:2, L0794:2,
				H0689:2, L0741:2, L0439:2, H0445:2, H0224:1, H0637:1, H0370:1, H0250:1, H0052:1, H0194:1, L0455:1, S0422:1, L0761:1, L0764:1, L0806:1, L0659:1, S622:1, L0789:1, L0792:1, H0672:1, S0152:1, S015
				S0434:1 and S0436:1.
	нррум30	603517	653	
114	HDPNC61	637585	124	AR241:10, AR184:10, AR313:8, AR245:8, AR242:8, AR265:8, AR162:7, AR192:7, AR161:7, AR271:7,
				AR163:7, AR244:7, AR052:6, AR191:6, AR183:6, AR312:6, AR196:6, AR173:6, AR197:6, AR273:6,
				AR198:6, AR204:6, AR165:6, AR053:5, AR310:5, AR166:5, AR274:5, AR264:5, AR229:5, AR299:5,
				AR164:5, AR175:5, AR174:5, AR270:5, AR039:5, AR238:5, AR311:5, AR275:5, AR300:5, AR189:5,
				AR292:5, AR033:5, AR200:5, AR096:5, AR177:5, AR182:5, AR219:5, AR296:5, AR309:4, AR178:4,
				AR218:4, AR206:4, AR186:4, AR240:4, AR213:4, AR205:4, AR266:4, AR055:4, AR293:4, AR250:4,
				AR199:4, AR247:4, AR170:4, AR188:4, AR181:4, AR185:4, AR226:4, AR261:4, AR269:4, AR089:4,
				AR272:4, AR308:4, AR290:4, AR285:4, AR315:4, AR195:4, AR254:4, AR284:4, AR193:4, AR295:4,
				AR268:3, AR258:3, AR236:3, AR243:3, AR212:3, AR234:3, AR253:3, AR190:3, AR316:3, AR298:3,
				AR235:3, AR286:3, AR291:3, AR179:3, AR262:3, AR217:3, AR294:3, AR282:3, AR314:3, AR104:3,
				AR246:3, AR257:3, AR237:3, AR249:3, AR168:3, AR203:3, AR233:3, AR248:3, AR280:3, AR255:3,
				AR180:3, AR259:3, AR277:3, AR230:3, AR267:3, AR297:3, AR201:3, AR207:3, AR231:3, AR216:2,
				AR223:2, AR289:2, AR171:2, AR288:2, AR221:2, AR287:2, AR060:2, AR227:2, AR225:2, AR211:2,
			_	AR176:2, AR239:2, AR222:2, AR210:2, AR232:2, AR256:1, AR260:1, AR263:1, AR283:1, AR194:1,
				AR061:1, AR228:1 L0766:3, L0764:2, L0771:2, L0439:2, L0731:2, H0739:1, H0747:1, H0749:1, H0415:1,
				H0057:1, T0006:1, L0598:1, L0800:1, L0768:1, L0794:1, L0803:1, L0774:1, L0807:1, L0783:1, L0519:1,
				L0664:1, L4560:1, L0352:1, H0522:1, L0748:1, L0747:1, L0749:1 and L0756:1.
115	HDPND46	637586	125	AR252:7, AR170:6, AR223:6, AR207:6, AR311:6, AR165:6, AR263:5, AR162:5, AR163:5, AR164:5,
				AR214:5, AR264:5, AR195:5, AR161:5, AR212:5, AR308:5, AR225:4, AR166:4, AR242:4, AR250:4,
				AR053:4, AR217:4, AR224:4, AR193:4, AR169:3, AR272:3, AR222:3, AR216:3, AR235:3, AR312:3,
				AR089:3, AR282:3, AR309:3, AR172:3, AR197:3, AR265:3, AR180:3, AR313:3, AR261:3, AR221:3,
				AR168:3, AR205:3, AR277:3, AR241:3, AR297:3, AR274:3, AR213:3, AR199:3, AR181:3, AR196:3,
				AR201:3, AR245:2, AR253:2, AR198:2, AR275:2, AR288:2, AR174:2, AR247:2, AR206:2, AR215:2,
				AR176:2, AR271:2, AR175:2, AR171:2, AR178:2, AR246:2, AR188:2, AR300:2, AR200:2, AR203:2,
				AR033:2, AR096:2, AR104:2, AR310:2, AR296:2, AR060:2, AR257:2, AR295:2, AR286:2, AR189:2,
				AR287:2, AR204:2, AR191:2, AR262:2, AR270:2, AR183:2, AR273:2, AR239:2, AR210:2, AR269:2,
				AR240:2, AR192:2, AR238:2, AR316:2, AR185:2, AR291:2, AR173:2, AR243:2, AR229:2, AR299:2,

				JAR285:2 AR236:2 AR266:2 AR190:2 AR179:1. AR293:1. AR177:1. AR283:1. AR039:1. AR268:1.
				AR255:1, AR290:1, AR234:1, AR061:1, AR228:1, AR232:1, AR231:1, AR237:1, AR258:1, AR267:1,
				AR294:1, AR182:1, AR227:1 H0522:2 and L0055:1.
116	HDPOE32	897276	126	AR281:16, AR280:13, AR315:12, AR310:12, AR265:11, AR314:10, AR202:10, AR194:10, AR052:8,
				AR206:7, AR263:7, AR295:6, AR292:6, AR248:6, AR313:6, AR033:6, AR246:6, AR251:6, AR282:5,
				AR283:5, AR096:5, AR247:5, AR244:5, AR249:5, AR312:5, AR241:4, AR299:4, AR218:4, AR213:4,
				AR227:4, AR238:4, AR294:4, AR177:4, AR277:4, AR259:4, AR198:4, AR300:4, AR219:4, AR205:4,
	_			AR309:4, AR183:4, AR232:4, AR215:3, AR039:3, AR273:3, AR053:3, AR231:3, AR061:3, AR226:3,
	_			AR293:3, AR055:3, AR229:3, AR089:3, AR274:3, AR271:3, AR284:3, AR175:3, AR237:3, AR243:3,
				AR184:3, AR256:3, AR298:3, AR185:3, AR253:3, AR182:2, AR204:2, AR316:2, AR186:2, AR234:2,
				AR250:2, AR270:2, AR267:2, AR233:2, AR192:2, AR268:2, AR285:2, AR104:2, AR266:2, AR258:2,
				AR214:2, AR286:2, AR172:2, AR289:2, AR290:2, AR275:2, AR193:2, AR240:2, AR217:2, AR060:1,
				AR296:1, AR291:1, AR179:1, AR269:1, AR201:1, AR255:1 L0740:9, L0731:9, L0803:8, H0436:6, L0756:6,
				L0805:5, L0751:5, L0754:5, L0783:4, L0747:4, L0749:4, L0777:4, L0752:4, H0556:3, H0013:3, L0771:3,
				L0794:3, L0774:3, L0775:3, L0809:3, L0665:3, L0757:3, L0759:3, L0599:3, H0543:3, H0422:3, H0341:2,
				L3659:2, L0005:2, S0046:2, H0586:2, H0427:2, S0280:2, H0201:2, H0553:2, H0040:2, H0551:2, T0042:2,
				L0770:2, L0769:2, L0764:2, L0766:2, L0790:2, H0144:2, L0438:2, H0547:2, S0406:2, L0439:2, L0750:2,
				L0779:2, L0581:2, H0685:1, S0040:1, H0717:1, L0002:1, S0418:1, S0354:1, S0358:1, S0376:1, H0733:1,
				80045:1, 80222:1, H0333:1, H0331:1, H0492:1, 80010:1, H0052:1, T0110:1, H0327:1, H0530:1, H0545:1,
				L0471:1, H0620:1, H0015:1, H0373:1, S0003:1, S0214:1, H0428:1, H0039:1, H0316:1, H0591:1, H0264:1,
				S0112:1, H0494:1, H0560:1, H0745:1, L0065:1, H0509:1, H0646:1, S0144:1, S0422:1, H0529:1, H0026:1,
				L0372:1, L0641:1, L0643:1, L0521:1, L0662:1, L0768:1, L0804:1, L0776:1, L0655:1, L0659:1, L5622:1,
				L0791:1, L0663:1, H0435:1, H0539:1, S0152:1, H0522:1, H0696:1, L0748:1, L0758:1, H0343:1, S0436:1,
				L0589:1, S0026:1, H0136:1, H0216:1 and H0506:1.
117	нррон06	683371	127	AR272:69, AR212:53, AR214:43, AR311:39, AR274:36, AR245:35, AR165:33, AR216:32, AR308:32,
				AR166:31, AR161:30, AR162:30, AR217:29, AR264:29, AR163:29, AR222:28, AR164:28, AR215:27,
				AR309:27, AR171:26, AR223:25, AR053:25, AR252:23, AR224:23, AR168:23, AR174:22, AR225:21,
				AR169:21, AR205:21, AR213:21, AR195:21, AR312:20, AR197:20, AR172:19, AR263:18, AR275:18,
				AR247:17, AR254:17, AR221:17, AR170:17, AR313:15, AR185:15, AR189:15, AR199:15, AR236:15,
				AR188:14, AR242:14, AR201:14, AR250:13, AR246:13, AR193:13, AR288:12, AR190:12, AR297:11,
				AR230:11, AR179:11, AR253:11, AR096:10, AR243:10, AR240:10, AR239:10, AR262:9, AR177:9, AR089:9,
				AR300:9, AR255:9, AR194:9, AR287:9, AR290:9, AR060:9, AR173:9, AR291:9, AR238:9, AR203:8,
				AR257:8, AR271:8, AR178:8, AR296:8, AR200:8, AR232:8, AR204:8, AR289:8, AR299:8, AR295:8,
				JAR293:8, AR231:8, AR261:8, AR282:8, AR316:8, AR234:8, AR265:8, AR285:7, AR191:7, AR226:7,

				AR277:7. AR181:7. AR233:7. AR061:7. AR180:6. AR198:6. AR192:6. AR237:6. AR210:6. AR283:6.
				AR270:6, AR039:6, AR228:6, AR207:6, AR294:6, AR280:6, AR269:6, AR229:5, AR186:5, AR315:5,
				AR266:5, AR183:5, AR033:5, AR267:5, AR268:5, AR104:5, AR211:5, AR286:5, AR176:5, AR227:5,
				AR298:4, AR175:4, AR182:4, AR196:4, AR258:4, AR281:4, AR292:4, AR219:3, AR310:3, AR260:3,
				AR218:3, AR052:3, AR284:3, AR273:2, AR256:2, AR202:2, AR055:2, AR314:2, AR259:1, AR235:1,
				AR206:1 L0748:4, L0774:3, H0046:2, L0662:2, L0803:2, L0666:2, L0749:2, L3643:1, H0728:1, H0431:1,
				H0318:1, H0024:1, S0318:1, H0087:1, S0344:1, L0638:1, L0637:1, L0775:1, L0659:1, L0783:1, L0663:1,
				L2259:1, H0521:1, H0522:1, L0777:1, L0731:1, L0599:1 and L0608:1.
118	HDPOZ56	1352319	128	AR248:20, AR253:20, AR281:16, AR244:14, AR273:13, AR202:12, AR315:12, AR310:11, AR263:11,
				AR224:10, AR280:10, AR194:9, AR284:9, AR223:9, AR251:9, AR165:9, AR215:9, AR265:9, AR206:9,
				AR198:9, AR311:9, AR164:9, AR221:9, AR249:9, AR264:8, AR166:8, AR172:8, AR222:8, AR289:8,
				AR212:8, AR171:8, AR272:8, AR161:8, AR225:8, AR235:8, AR266:8, AR207:8, AR162:8, AR214:8,
				AR168:7, AR205:7, AR216:7, AR163:7, AR217:7, AR246:7, AR052:7, AR283:7, AR169:7, AR192:7,
				AR245:7, AR242:7, AR282:7, AR053:7, AR295:7, AR312:7, AR291:7, AR285:7, AR274:7, AR213:7,
				AR308:6, AR268:6, AR238:6, AR261:6, AR184:6, AR298:6, AR250:6, AR288:6, AR183:6, AR239:6,
				AR292:6, AR033:6, AR232:6, AR290:6, AR219:6, AR197:6, AR286:6, AR243:6, AR270:6, AR269:6,
				AR309:6, AR287:6, AR180:6, AR277:5, AR196:5, AR271:5, AR297:5, AR314:5, AR275:5, AR204:5,
				AR176:5, AR254:5, AR195:5, AR299:5, AR182:5, AR170:5, AR237:5, AR210:5, AR227:5, AR218:5,
				AR177:5, AR247:5, AR294:5, AR174:5, AR039:5, AR296:5, AR257:5, AR089:5, AR240:5, AR293:5,
				AR200:4, AR316:4, AR181:4, AR255:4, AR230:4, AR252:4, AR096:4, AR236:4, AR241:4, AR061:4,
				AR199:4, AR186:4, AR234:4, AR262:4, AR175:4, AR313:4, AR300:4, AR178:4, AR258:4, AR229:4,
				AR231:4, AR228:4, AR203:4, AR226:4, AR267:4, AR191:4, AR256:4, AR193:4, AR188:4, AR211:3,
				AR055:3, AR189:3, AR060:3, AR233:3, AR104:3, AR259:3, AR185:3, AR260:3, AR173:3, AR201:3,
				AR190:3, AR179:2 H0521:17, H0522:5, L0665:4, H0638:3, H0658:3, H0255:2, H0250:2, H0618:2, L0804:2,
				L0779:2, H0542:2, H0663:1, S0046:1, H0617:1, H0560:1, H0641:1, S0422:1, S0426:1, H0695:1, L0655:1,
			_	HUG89:1, HU435:1, HU553:1, HU543:1, HU423:1 and HU506:1.
	HDP0256	815653	654	
	HDPOZ56	743479	559	
119	HDPPA04	904765	129	AR251:7, AR180:6, AR252:4, AR194:4, AR249:4, AR197:4, AR169:3, AR178:3, AR235:3, AR241:3,
	-			AR190:3, AR184:2, AR172:2, AR290:2, AR271:2, AR191:2, AR174:2, AR225:2, AR166:2, AR273:2,
				AR175.2, AR268:2, AR224:2, AR214:2, AR291:2, AR164:2, AR282:2, AR168:2, AR253:2, AR165:2,
				AR295:2, AR212:2, AR183:2, AR246:1, AR287:1, AR096:1, AR311:1, AR272:1, AR188:1, AR308:1,
				AR204:1, AR277:1, AR310:1, AR297:1, AR201:1, AR219:1, AR186:1, AR210:1, AR213:1, AR230:1,
				[AR189:1, AR281:1, AR313:1, AR257:1, AR202:1 H0521:4, L0731:4, H0591:2, H0641:2, L0794:2, T0049:1,

				S0476:1, H0004:1, H0494:1, L0791:1, H0522:1, L0758:1 and S0452:1.
	HDPPA04	905419	929	
	HDPPA04	905418	657	
120	НОРРН47	630030	130	AR066:403, AR104:245, AR055:205, AR039:180, AR185:139, AR299:125, AR316:119, AR282:93, AR096:85, AR300:83, AR089:81, AR283:79, AR240:78, AR277:59, AR218:45, AR219:42, AR313:39, AR248:20, AR266:17, AR270:16, AR292:16, AR182:15, AR293:13, AR292:13, AR229:14, AR238:13, AR293:13, AR232:13, AR232:11, AR265:11, AR265:12, AR175:12, AR298:12, AR288:10, AR238:10, AR285:11, AR285:11, AR265:11, AR265:10, AR298:12, AR288:10, AR298:10, AR298:10, AR298:10, AR298:10, AR298:10, AR298:10, AR298:10, AR298:10, AR298:11, AR288:14, AR298:10, AR298:10, AR298:10, AR298:11, AR298:11, AR298:11, AR298:11, AR298:11, AR298:11, AR298:12, AR298:12, AR298:10, AR298:11, AR298:11, AR298:11, AR298:12, AR298:20, AR298:1, H0030:2, H0
121	HDPSB18	1043263	131	AR197:9, AR060:8, AR253:8, AR161:8, AR162:8, AR165:8, AR165:8, AR164:7, AR089:7, AR196:7, AR204:7, AR192:7, AR207:7, AR177:6, AR193:6, AR183:6, AR233:6, AR233:6, AR232:6, AR177:6, AR193:6, AR233:6, AR204:7, AR192:7, AR207:7, AR177:6, AR193:6, AR204:5, AR207:5, AR207:5, AR204:5, AR204:6, AR204:6, AR204:4, AR204:2, AR2

				80358:2, 80360:2, 80278:2, H0620:2, L0500:2, L0775:2, L0710:2, L0777:2, L0752:2, L0588:2, H0149:1, H0295:1, T0049:1, H0381:1, H0484:1, H0483:1, H0638:1, S0420:1, S0444:1, S0408:1, S0045:1, H0587:1, H0518:1, H0518:1, H0518:1, H0518:1, H0518:1, H0518:1, H0648:1, H0648:1, H0648:1, L0497:1, H0648:1, L0497:1, H0648:1, L0766:1, L0764:1, L0764:1, L0764:1, L0764:1, L0764:1, L0764:1, L0766:1, L0766:1, L0764:1, L07
				L0493:1, L0511:1, L0665:1, L2260:1, H0698:1, H0690:1, H0521:1, S0406:1, S3014:1, L0747:1, L0780:1, H0543:1 and H0422:1.
	HDPSB18	903816		
	HDPSB18	905414	629	
	HDPSB18	732097	099	
122	HDPSP01	1352280	132	AR169:8, AR235:5, AR265:5, AR180:4, AR176:4, AR161:4, AR163:4, AR363:4, AR369:3,
				AKIO3:3, AKI/2:3, AKI/1:3, AKZZZ:3, AKIO0:3, AKIO3:3, AKZZZ:3, AKIO0:3, AKIO3:3, AKI
				AR257.2, AR170.2, AR270.2, AR289.2, AR216.2, AR173.2, AR191.2, AR214.2, AR287.2, AR296.2,
				AR242.2, AR228.2, AR247.2, AR295.2, AR255.2, AR192.2, AR240.2, AR174.2, AR227.2, AR053.2,
				AR275:2, AR203:2, AR266:2, AR288:2, AR215:2, AR277:2, AR239:2, AR291:2, AR264:2, AR263:2,
				AR285:2, AR230:2, AR190:2, AR310:2, AR189:2, AR274:1, AR181:1, AR286:1, AR179:1, AR226:1,
				AR246:1, AR231:1, AR178:1, AR175:1, AR238:1, AR233:1, AR273:1, AR290:1, AR243:1, AR200:1,
				AR293:1, AR294:1, AR309:1, AR284:1, AR312:1, AR313:1, AR234:1, AR229:1, AR061:1, AR300:1,
				AR217:1, AR268:1, AR292:1, AR089:1, AR262:1 L0769:6, L0751:5, L0752:5, H0617:4, L0806:4, L0731:4,
				L0771:3, L0774:3, H0370:2, S0314:2, H0551:2, H0059:2, L0792:2, L0745:2, L0750:2, L0777:2, S0444:1,
				H0728:1, S0132:1, H0550:1, H0392:1, H0586:1, H0427:1, H0618:1, H0052:1, H0545:1, H0123:1, H0620:1,
				S0051:1, H0135:1, H0100:1, H0494:1, L0800:1, L0764:1, L0804:1, L0775:1, L0805:1, L0783:1, L0809:1,
				L06666:1, L0665:1, H0684:1, S0328:1, H0521:1, H0555:1, H0478:1, L0743:1, L0747:1, L0779:1, L0780:1,
	HNPSPOI	680120	199	LO (33:1 alid 30434:1.
123	HDPSP54	744440	133	AR263:53. AR207:53. AR214:51. AR169:41. AR224:40. AR222:38, AR223:37, AR195:36, AR235:32,
}		?)	AR217:31, AR212:31, AR168:30, AR172:30, AR311:29, AR053:28, AR192:28, AR196:28, AR171:27,
				AR198.27, AR213.27, AR221.27, AR161.26, AR264.26, AR252.26, AR162.25, AR170.25, AR210.25,
				AR245:24, AR033:23, AR225:23, AR216:23, AR163:22, AR089:22, AR261:22, AR215:21, AR271:21,
				AR177:21, AR181:21, AR104:21, AR295:20, AR218:20, AR236:19, AR193:19, AR191:19, AR211:19,
				AR197:18, AR185:18, AR055:18, AR219:18, AR201:18, AR240:18, AR165:17, AR316:17, AR166:17,
				AR299:17, AR164:17, AR060:17, AR253:17, AR174:16, AR242:16, AR288:16, AR199:16, AR205:16,
			-	AR246:15, AR282:15, AR039:15, AR238:15, AR308:15, AR229:15, AR175:14, AR188:14, AR285:14,
				AR297:14, AR254:14, AR189:14, AR232:14, AR277:13, AR300:13, AR287:13, AR243:13, AR230:13,

WO 02/102994

				AR312:13, AR291:13, AR286:12, AR204:12, AR250:12, AR226:12, AR173:12, AR200:12, AR239:12, AR176:12, AR274:11, AR296:11, AR096:11, AR309:11, AR203:11, AR293:11, AR293:11, AR289:10, AR283:10, AR283:10, AR283:10, AR283:10, AR283:10, AR393:10, AR393:
				AR233:9, AR260:9, AR061:9, AR183:9, AR290:8, AR275:8, AR272:8, AR266:8, AR294:7, AR256:7, AR228:6 L0740:8, L0662:3, L0659:3, L0663:3, S0422:2, L0646:2, L0766:2, L0439:2, L0779:2, H0171:1,
			<u> </u>	S6024:1, S0110:1, S0360:1, H0411:1, H0455:1, S0474:1, H0510:1, S0438:1, L0637:1, L5565:1, L0771:1, L0773:1, L0794:1, L0804:1, L0787:1, L0665:1, L0438:1, H0521:1, S0406:1, L0754:1, L0755:1 and L0758:1.
	HDPSP54	502472	662	
124	HDPSU13	638932	134	AR180:4, AR270:4, AR223:4, AR161:3, AR162:3, AR222:3, AR170:3, AR163:3, AR235:3, AR176:3,
				AR250:3, AR311:3, AR221:3, AR169:3, AR309:3, AR254:3, AR217:2, AR193:2, AR255:2, AR262:2,
				AK203:2, AK197:2, AK103:2, AK2/1:2, AK289:2, AK250:2, AK260:2, AK291:2, AK201:2, AK2
				AR191.2, AR188:2, AR264:2, AR237:1, AR178:1, AR257:1, AR060:1, AR296:1, AR268:1, AR190:1,
				AR277:1, AR285:1, AR238:1, AR171:1, AR269:1, AR175:1, AR247:1, AR312:1, AR300:1, AR205:1,
				AR288:1, AR196:1, AR164:1, AR189:1, AR182:1, AR297:1, AR255:1, AR295:1, AR104:1, AR226:1,
				AR240:1, AR231:1, AR252:1, AR211:1, AR224:1, AR316:1, AR313:1, AR089:1 H0521:1 and H0423:1.
125	HDPTD15	692917	135	AR214:32, AR223:30, AR222:27, AR224:27, AR225:24, AR169:24, AR165:22, AR164:22, AR221:22,
				AR215:22, AR212:22, AR195:21, AR308:21, AR217:21, AR170:20, AR172:20, AR166:20, AR168:20,
-				AR171:19, AR216:17, AR264:16, AR162:15, AR207:15, AR161:15, AR193:15, AR163:15, AR235:15,
				AR311:14, AR196:14, AR250:13, AR173:13, AR245:12, AR261:12, AR242:12, AR297:12, AR288:12,
				AR210:12, AR199:11, AR236:11, AR263:11, AR254:10, AR191:10, AR181:10, AR312:10, AR213:10,
				AR247:10, AR197:10, AR287:10, AR189:10, AR188:10, AR252:9, AR255:9, AR174:9, AR313:9, AR053:9,
				AR178:9, AR190:9, AR200:9, AR201:9, AR176:9, AR257:8, AR253:8, AR240:8, AR230:8, AR269:8,
				AR272:8, AR211:8, AR192:8, AR262:8, AR229:8, AR033:8, AR180:8, AR309:8, AR239:8, AR238:7,
				AR258:7, AR291:7, AR203:7, AR260:7, AR285:7, AR270:7, AR295:6, AR271:6, AR293:6, AR089:6,
				AR226:6, AR183:6, AR177:6, AR266:6, AR175:6, AR296:6, AR198:6, AR277:5, AR251:5, AR205:5,
				AR234:5, AR282:5, AR290:5, AR300:5, AR231:5, AR286:5, AR299:5, AR274:5, AR232:5, AR316:5,
				AR268:5, AR289:5, AR179:5, AR275:5, AR052:5, AR228:5, AR246:5, AR182:4, AR227:4, AR060:4,
				AR204:4, AR185:4, AR267:4, AR256:4, AR243:4, AR248:4, AR096:4, AR294:4, AR283:4, AR237:4,
				AR233:4, AR219:3, AR249:3, AR218:3, AR186:2, AR039:2, AR310:2, AR206:2, AR104:2, AR055:2,
				AR292:2, AR061:2, AR298:2, AR259:1, AR284:1, AR194:1 H0521:1
126	HDPTK41	744824	981	AR250:39, AR253:27, AR248:25, AR254:19, AR249:15, AR217:12, AR215:11, AR169:11, AR311:10,
				AR264:10, AR223:10, AR224:10, AR060:10, AR222:10, AR214:9, AR225:9, AR207:9, AR171:9, AR165:9,

				AR235:8, AR216:8, AR172:8, AR221:8, AR164:8, AR252:8, AR168:8, AR166:8, AR268:8, AR265:7, AR263:7, AR2
				AR196:7, AR240:7, AR242:6, AR213:6, AR261:6, AR195:6, AR194:6, AR270:6, AR173:6, AR269:6,
				AR246:6, AR251:6, AR308:6, AR288:6, AR181:5, AR295:5, AR190:5, AR193:5, AR192:5, AR202:5,
				AR053:5, AR201:5, AR205:5, AR211:5, AR189:5, AR176:5, AR241:5, AR229:5, AR244:5, AR200:5,
	-			AR257:5, AR191:5, AR315:5, AR299:5, AR183:5, AR309:4, AR236:4, AR033:4, AR267:4, AR174:4,
				AR310:4, AR178:4, AR198:4, AR188:4, AR204:4, AR297:4, AR175:4, AR255:4, AR199:4, AR312:4,
				AR177:4, AR210:4, AR272:4, AR282:4, AR271:4, AR287:4, AR243:4, AR286:4, AR203:4, AR285:4,
-	•			AR039:4, AR104:4, AR26:4, AR234:3, AR180:3, AR089:3, AR238:3, AR262:3, AR316:3, AR206:3,
				AR247:3, AR277:3, AR313:3, AR294:3, AR052:3, AR197:3, AR230:3, AR293:3, AR292:3, AR258:3,
				AR296:3, AR239:3, AR219:3, AR291:3, AR300:3, AR289:3, AR275:3, AR283:3, AR280:3, AR226:2,
				AR274:2, AR231:2, AR284:2, AR227:2, AR185:2, AR237:2, AR184:2, AR179:2, AR186:2, AR228:2,
				AR233:2, AR260:2, AR232:2, AR281:2, AR298:2, AR256:2, AR061:2, AR273:2, AR218:2, AR055:2,
				AR314:2 L0599:4, T0049:3, L0659:3, L0748:3, L0755:3, H0038:2, S0142:2, S0344:2, L0770:2, L0662:2,
				L0775:2, H0521:2, L0752:2, L0758:2, L0759:2, L0588:2, H0650:1, H0254:1, H0402:1, H0580:1, S0474:1,
				H0581:1, H0310:1, S0294:1, S0144:1, S0426:1, L0644:1, L0768:1, L0766:1, L0774:1, L0790:1, L0666:1,
				L0665:1, H0539:1, S0406:1, L0744:1, L0779:1, L0777:1, H0445:1 and S0276:1.
127	HDPUG50	684120	137	AR273:7, AR269:6, AR183:5, AR270:5, AR265:4, AR264:4, AR272:4, AR309:4, AR052:4, AR312:4,
				AR053:4, AR290:4, AR291:4, AR176:4, AR194:4, AR162:4, AR161:4, AR215:4, AR217:4, AR238:4,
_				AR165:4, AR193:4, AR163:4, AR314:4, AR271:4, AR164:4, AR274:4, AR186:4, AR206:4, AR173:3,
				AR166:3, AR311:3, AR212:3, AR286:3, AR249:3, AR268:3, AR308:3, AR199:3, AR202:3, AR182:3,
				AR298:3, AR284:3, AR280:3, AR169:3, AR310:3, AR225:3, AR178:3, AR267:3, AR275:3, AR170:3,
•				AR292:3, AR213:2, AR168:2, AR201:2, AR196:2, AR191:2, AR177:2, AR188:2, AR246:2, AR219:2,
				AR189:2, AR175:2, AR263:2, AR185:2, AR204:2, AR184:2, AR198:2, AR171:2, AR285:2, AR266:2,
		•		AR192:2, AR313:2, AR181:2, AR282:2, AR262:2, AR293:2, AR257:2, AR277:2, AR174:2, AR255:2,
	-			AR089:2, AR281:2, AR210:2, AR200:2, AR315:2, AR227:2, AR203:2, AR296:2, AR253:2, AR247:2,
	-		•	AR190:2, AR239:2, AR205:2, AR211:2, AR223:2, AR231:2, AR294:2, AR295:2, AR033:2, AR316:2,
	į			AR229:2, AR179:2, AR224:2, AR216:1, AR299:1, AR259:1, AR096:1, AR195:1, AR287:1, AR218:1,
				AR234:1, AR230:1, AR289:1, AR300:1, AR283:1, AR061:1, AR244:1, AR104:1, AR261:1, AR288:1,
		•		AR060:1, AR237:1, AR233:1, AR240:1 H0659:5, L0740:5, L0662:4, L0771:3, H0547:3, H0521:3, L0759:3,
				L0362:3, H0013:2, H0597:2, H0046:2, H0083:2, S0214:2, H0674:2, H0494:2, L0517:2, H0682:2, L0747:2,
	-			L0779:2, S0434:2, H0685:1, H0583:1, H0661:1, H0638:1, S0420:1, S0360:1, H0580:1, H0438:1, H0497:1,
				H0599:1, S0010:1, H0581:1, H0545:1, H0457:1, H0563:1, L0163:1, L0055:1, H0673:1, H0212:1, H0591:1,
				H0038:1, H0616:1, H0488:1, S0142:1, S0344:1, L0763:1, L0770:1, L0767:1, L0766:1, L0776:1, L0659:1,

				F 0782-1 1 0545-1 H0144-1 H0672-1 S0152-1 S0406-1 H0627-1 S0390-1 1.0748-1 L0777-1 L0758-1.
				S0026:1, H0665:1 and H0543:1.
128	HDPUH26	866433	138	AR177:16, AR176:15, AR174:15, AR175:14, AR235:13, AR273:12, AR183:12, AR191:11, AR251:11,
				AR261:11, AR182:10, AR170:10, AR310:9, AR190:9, AR171:9, AR189:9, AR169:9, AR173:9, AR195:9,
				AR214:8, AR224:8, AR265:8, AR215:8, AR297:8, AR222:1, AR19/:/, AR245:1, AR269:1, AR221:7,
				AK288:7, AK165:7, AK217:7, AK285:1, AK188:7, AK202:7, AK164:7, AK205:7, AK216:7, AK267:7, AK2
				AKIOI:/, AKIO2:/, AK291:/, AK108: /, AK1/2:0, AK103:0, AK100:0, AK2/0:0, AK292:0, AK223:0, Ap180:6, Ap205:6, Ap284:6, Ap245:6, Ap207:6, AR215:6, AR271:6, AR298:5, AR268:5
				AR196:5, AR255:5, AR311:5, AR194:5, AR211:5, AR201:5, AR236:5, AR226:5, AR264:5, AR238:5,
				AR312:5, AR198:5, AR232:5, AR181:5, AR262:4, AR257:4, AR178:4, AR249:4, AR282:4, AR213:4,
				AR199:4, AR206:4, AR252:4, AR192:4, AR247:4, AR193:4, AR308:4, AR239:4, AR205:4, AR212:4,
				AR274:4, AR203:4, AR225:4, AR272:4, AR242:4, AR309:4, AR266:4, AR286:4, AR296:4, AR289:3,
				AR267:3, AR234:3, AR185:3, AR240:3, AR237:3, AR231:3, AR227:3, AR250:3, AR299:3, AR089:3,
				AR210:3, AR033:3, AR248:3, AR314:3, AR293:3, AR246:3, AR290:3, AR294:3, AR060:3, AR316:3,
				JAR230:3, AR039:3, AR258:3, AR280:3, AR275:3, AR200:3, AR233:3, AR229:3, AR283:2, AR061:2,
				AR253:2, AR277:2, AR313:2, AR228:2, AR281:2, AR300:2, AR096:2, AR179:2, AR256:2, AR260:2,
				AR104:2, AR219:2, AR244:2, AR204:2, AR186:1, AR218:1, AR052:1, AR259:1, AR055:1 S0358:4,
				S0280:3, H0717:2, H0370:2, H0510:2, H0556:1, H0716:1, S0442:1, S0354:1, S0476:1, H0393:1, H0549:1,
				H0586:1, T0082:1, H0036:1, H0590:1, H0596:1, H0050:1, H0628:1, H0264:1, H0494:1, H0509:1, L2257:1,
				L.2654:1, H0521:1, L0741:1, L0439:1, H0445:1, S0436:1, L0605:1, S0011:1 and H0665:1.
129	HDPUW68	812737	139	AR253:15, AR052:14, AR213:11, AR184:11, AR230:11, AR228:9, AR170:9, AR250:8, AR168:8, AR254:8,
	•		<u> </u>	AR225:6, AR297:6, AR053:6, AR251:5, AR267:5, AR248:5, AR268:5, AR221:5, AR096:5, AR214:5,
				AR238:5, AR178:5, AR249:5, AR216:5, AR173:5, AR239:5, AR236:5, AR166:5, AR182:4, AR161:4,
				AR162:4, AR217:4, AR269:4, AR282:4, AR163:4, AR224:4, AR222:4, AR237:4, AR296:4, AR257:4,
				AR263:4, AR244:4, AR227:4, AR258:4, AR252:4, AR291:4, AR229:4, AR219:4, AR287:4, AR290:4,
				JAR275:4, AR264:4, AR183:4, AR175:4, AR223:4, AR199:4, AR308:4, AR171:3, AR194:3, AR246:3,
				AR277:3, AR260:3, AR288:3, AR240:3, AR274:3, AR191:3, AR284:3, AR243:3, AR312:3, AR293:3,
				AR179:3, AR233:3, AR300:3, AR261:3, AR218:3, AR165:3, AR061:3, AR231:3, AR033:3, AR298:3,
				AR316:3, AR164:3, AR181:3, AR255:3, AR270:3, AR189:3, AR313:3, AR309:3, AR234:2, AR186:2,
				AR247:2, AR195:2, AR285:2, AR232:2, AR292:2, AR185:2, AR226:2, AR180:2, AR299:2, AR289:2,
				AR271:2, AR193:2, AR089:2, AR203:2, AR311:2, AR060:2, AR172:2, AR310:2, AR215:2, AR177:2,
				AR266:2, AR262:2, AR272:2, AR188:2, AR196:2, AR169:1, AR212:1, AR210:1, AR055:1, AR283:1,
				AR190:1, AR241:1, AR295:1, AR286:1, AR201:1, AR294:1, AR104:1, AR256:1, AR205:1, AR039:1
				H0677:47, H0521:14, H0295:3, H0587:3, H0556:2, H0656:2, H0638:2, H0411:2, S0002:2, L0766:2, L0776:2,

				L0659:2, L0809:2, H0670:2, H0522:2, S0404:2, L0743:2, L0744:2, L0740:2, L0731:2, S0134:1, H0657:1, H0254:1, S0476:1, S0278:1, H0486:1, H0575:1, H0606:1, H0135:1, H0561:1, S0438:1, L0761:1, L0768:1, L0655:1, L2261:1, S0374:1, H0690:1, H0435:1, H0658:1, H0696:1, H0678:1, L0779:1, L0752:1, H0445:1,
130	норун60	796865	140	AR263:12, AR265:9, AR311:8, AR312:8, AR264:7, AR308:7, AR161:7, AR162:7, AR052:7, AR163:7, AR165:6, AR197:6, AR164:6, AR053:6, AR242:6, AR193:6, AR193:6, AR195:5, AR196:5, AR196:5, AR245:5, AR196:5, AR196:5, AR273:4, AR263:4, AR236:4, AR226:4, AR262:4, AR282:4, AR288:4, AR288:4, AR299:4, AR299:4, AR295:3, AR296:4, AR296:4, AR295:3, AR296:4, AR296:4, AR296:4, AR296:4, AR296:4, AR296:4, AR296:4, AR296:4, AR296:4, AR296:3, AR176:3, AR176:3, AR176:3, AR176:3, AR176:3, AR177:3, AR296:3, AR296:1, H0650:1, H0650:2, L0771:2, L0
131	HDPWN93	992925	141	AR313:5, AR089:5, AR207:5, AR096:5, AR219:5, AR217:4, AR299:4, AR162:4, AR165:4, AR165:4, AR163:4, AR109:5, AR207:5, AR096:5, AR213:5, AR089:5, AR207:5, AR096:5, AR219:5, AR277:4, AR163:4, AR163:4, AR264:4, AR163:4, AR263:3, AR274:4, AR104:4, AR104:4, AR193:3, AR240:3, AR240:4, AR196:3, AR311:3, AR216:3, AR208:3, AR200:3, AR216:4, AR218:3, AR218:3, AR218:3, AR208:2, AR245:3, AR245:3, AR247:2, AR247:2, AR288:2, AR198:3, AR198:3, AR209:2, AR257:2, AR308:2, AR247:2, AR247:1, AR2

		П		Ξ.	٦		٦																٦
S0442:2, T0060:2, H0424:2, H0038:2, H0063:2, L0771:2, S0152:2, L0754:2, L0747:2, L0601:2, H0543:2, H0255:1, H0589:1, H0580:1, S0045:1, S0222:1, H0409:1, H0333:1, L0021:1, T0082:1, H0706:1, H0590:1, S0010:1, H0194:1, H0251:1, H0309:1, H0263:1, H0597:1, H0545:1, T0010:1, S0340:1, H0622:1, H0417:1, H0030:1, H0135:1, H0616:1, H0087:1, H0494:1, H0131:1, H0267:1, H0646:1, L0763:1, L0583:1, L066:1, L0768:1, L076			AR206:6, AR263:4, AR24:3, AR273:3, AR310:2, AR215:2, AR250:2, AR169:2, AR243:2, AR171:2, AR282:2, AR216:2, AR253:2, AR285:2, AR247:2, AR183:2, AR277:2, AR060:2, AR212:1, AR217:1,	AR238:1, AR312:1, AR186:1, AR271:1, AR266:1, AR055:1, AR255:1, AR262:1, AR311:1, AR289:1, AR238:1, AR231:1, AR296:1, AR2		AR282:115, AR316:1 S0392:5, H0478:5, H0479:3, H0485:2 and H0486:1.		AR313:60, AR163:58, AR196:54, AR264:52, AR161:50, AR162:49, AR263:42, AR165:41, AR164:39,	AR229:39, AR166:39, AR240:38, AR096:37, AR089:36, AR174:35, AR247:35, AR173:34, AR242:33,	AR185:33, AR177:32, AR181:32, AR234:31, AR218:30, AR300:30, AR258:28, AR308:28, AR275:27,	AR262:27, AR104:27, AR192:26, AR175:26, AR179:26, AR207:25, AR236:25, AR274:25, AR235:25,	AR311:24, AR312:24, AR233:23, AR293:23, AR257:23, AR053:22, AR309:22, AR261:22, AR199:22,	AR316:21, AR191:21, AR277:21, AR238:21, AR230:21, AR299:21, AR213:20, AR060:20, AR226:20,	AR197:20, AR180:20, AR297:19, AR200:19, AR212:19, AR193:19, AR203:18, AR271:17, AR231:17,	AR219:17, AR237:16, AR295:16, AR188:16, AR178:16, AR285:16, AR282:16, AR198:16, AR245:15,	AR189:15, AR039:15, AR033:15, AR204:15, AR227:15, AR228:15, AR286:15, AR195:15, AR239:14,	AR294:14, AR254:14, AR255:14, AR296:14, AR183:14, AR287:13, AR269:13, AR260:13, AR270:12,	AR201:12, AR288:11, AR182:11, AR291:11, AR211:11, AR252:10, AR290:10, AR250:10, AR223:10,	AR253:10, AR169:10, AR170:10, AR243:10, AR224:10, AR168:10, AR214:10, AR256:10, AR272:9,	AR268:9, AR246:9, AR171:9, AR283:9, AR225:9, AR172:8, AR289:8, AR205:8, AR232:8, AR222:8,	AR190:8, AR176:8, AR210:8, AR217:8, AR216:8, AR267:8, AR221:7, AR215:7, AR266:5, AR055:5,	AR061:5 L0809:7, L0662:4, L0794:2, H0592:1, H0586:1, H0485:1, H0486:1, H0687:1, L0648:1, L0803:1,	L0375:1, L0384:1, L0663:1, H0683:1, L0439:1 and L0747:1.
	663	664	142		665	143	999	144															
	887914	905983	1309175		834692	1307742	543618	1025421															
	HDPWN93	HDPWN93	нронроз		нронроз	HDTBP04		HDTEK44							-								
			132			133		134		_													

	8		AR282:122, AR039:29, AR300:8, AR316:4, AR055:2, AR060:2, AR313:1 H0486:8, S0328:7, S0356:5, L0655:5, L0762:3, L5574:3, H0445:3, L0794:2, L0653:2, S0330:2, L0750:2, L0808:1, H0551:1, L0761:1, L5564:1, L0606:1, S0392:1, L0747-1, and S0384-1			
199	899	699	145	146	029	1/9
890972	904770	902431	571078	1043391	874477	892317
HDTEK44	HDTEK44	HDTEK44	HDTEN81	HDTFE17	HDTFE17	HDTFE17
			135	136		

				AR164:11, AR166:11, AR161:10, AR162:10, AR163:10, AR235:10, AR181:10, AR269:10, AR183:9,
	-			AR173:9, AR172:9, AR261:9, AR295:9, AR188:8, AR224:8, AR256:8, AR089:8, AR192:8, AR282:8,
				AR180:8, AR196:8, AR214:8, AR240:8, AR263:7, AR217:7, AR286:7, AR226:7, AR270:7, AR225:7,
				JAR297:7, AR182:7, AR207:7, AR247:7, AR169:7, AR221:7, AR232:7, AR275:7, AR293:7, AR287:7,
				AR222:6, AR223:6, AR285:6, AR258:6, AR316:6, AR300:6, AR238:6, AR262:6, AR096:6, AR290:6,
				AR185:6, AR311:6, AR264:6, AR216:6, AR268:6, AR171:6, AR178:6, AR313:5, AR309:5, AR296:5,
				AR272:5, AR239:5, AR233:5, AR053:5, AR257:5, AR288:5, AR289:5, AR213:5, AR060:5, AR291:5,
				AR104:5. AR308:5, AR168:5, AR267:5, AR203:5, AR195:5, AR299:5, AR033:5, AR294:5, AR277:4,
				AR228:4, AR255:4, AR211:4, AR237:4, AR039:4, AR199:4, AR266:4, AR312:4, AR179:4, AR198:4,
				AR256:4, AR204:4, AR061:4, AR212:4, AR229:4, AR200:4, AR260:4, AR283:3, AR231:3, AR243:3,
				AR234:3, AR271:3, AR252:3, AR227:3, AR170:3, AR193:3, AR197:3, AR055:3, AR230:3, AR245:3,
				AR201:3, AR246:3, AR205:2, AR210:2, AR218:2, AR219:2, AR215:1, AR242:1 L0375:4, L0605:4,
				L0809:3, L0803:2, L5286:2, L0743:2, L0744:2, L0747:2, L0779:2, L0777:2, L0731:2, L0758:2, S0412:2,
				H0171:1, H0716:1, H0772:1, H0486:1, L0021:1, H0598:1, S0438:1, L0769:1, L0663:1, L0665:1, L0742:1,
				L0748:1, L0750:1 and L0756:1.
138	HDTIT10	839264	148	AR171:5, AR192:4, AR169:4, AR296:3, AR271:3, AR176:3, AR225:3, AR170:3, AR217:3, AR207:2,
?)	AR163:2, AR282:2, AR216:2, AR180:2, AR178:2, AR060:2, AR266:2, AR172:2, AR161:2, AR238:2,
				AR053:2, AR168:2, AR162:2, AR269:2, AR214:1, AR198:1, AR257:1, AR272:1, AR264:1, AR165:1,
				AR164:1, AR268:1, AR055:1, AR104:1, AR182:1, AR311:1, AR039:1, AR291:1, AR096:1, AR247:1,
				AR297:1, AR188:1, AR033:1, AR201:1, AR316:1, AR277:1, AR286:1, AR288:1, AR175:1 L0741:10,
				H0484:9, H0585:8, L0769:8, L0742:8, L0751:6, L0774:5, L0731:5, H0618:4, L0766:4, L0776:4, L0665:4,
				S0406.4, L0754.4, L0747.4, L0758.4, H0556.3, H0341.3, L0775.3, L0753.3, S0356.2, S0410.2, S0046.2,
				H0257:2, H0559:2, H0486:2, H0546:2, H0009:2, H0617:2, H0063:2, H0494:2, L0375:2, L0524:2, L0809:2,
				H0670:2, L0743:2, L0748:2, L0740:2, L0779:2, L0755:2, L0757:2, S0434:2, L0588:2, L0485:2, H0543:2,
				H0422:2, H0677:2, H0170:1, H0171:1, H0141:1, H0717:1, H0295:1, S0134:1, H0657:1, S0116:1, H0254:1,
				H0402:1, S0420:1, S0442:1, S0358:1, H0728:1, H0733:1, H0734:1, H0393:1, L3388:1, H0431:1, H0370:1,
				L0622:1, L0623:1, H0485:1, T0114:1, H0253:1, H0318:1, H0085:1, H0150:1, H0050:1, H0620:1, H0373:1,
				H0051:1, H0266:1, S0338:1, H0606:1, H0211:1, S0036:1, H0040:1, H0634:1, H0087:1, H0100:1, H0429:1,
				H0509:1, S0422:1, L0369:1, L0762:1, L0770:1, L0796:1, L5575:1, L5565:1, L3905:1, L0761:1, L0372:1,
				L0764:1, L0773:1, L0662:1, L0768:1, L0794:1, L0806:1, L0655:1, L0807:1, L0542:1, L0783:1, H0725:1,
				H0726:1, H0547:1, H0689:1, H0660:1, H0672:1, S0328:1, S0330:1, S0152:1, H0522:1, L0749:1, L0750:1,
				L0780:1, L0759:1, S0436:1, S0192:1, S0194:1 and H0542:1.
	HDTIT10	834697	672	
130	HDTMK50	1011485	149	AR196:9. AR313:9. AR162:9, AR264:9, AR161:9, AR165:9, AR163:8, AR164:8, AR173:8, AR166:8,
101	111 11112V	7,7, + + 7,1		

				AR262:8, AR175:8, AR309:7, AR174:7, AR247:7, AR179:6, AR269:6, AR240:6, AR180:6, AR257:6, AR200:6, AR275:6, AR178:6, AR270:6, AR191:6, AR238:6, AR258:6, AR312:6, AR183:6, AR199:5,
				JAR181:5, AR236:5, AR188:5, AR293:5, AR234:5, AR285:5, AR246:5, AR252:5, AR274:5, AR294:5, JAR300:5, AR203:5, AR177:5, AR233:5, AR296:5, AR268:5, AR229:5, AR263:5, AR189:5,
				AR096:4, AR226:4, AR193:4, AR231:4, AR176:4, AR253:4, AR287:4, AR185:4, AR290:4, AR297:4,
				AR261:4, AR255:4, AR207:4, AR190:3, AR295:3, AR217:3, AR168:3, AR237:3, AR299:3, AR291:3,
				AK308:3, AK267:3, AK228:3, AK233:3, AK089:3, AK218:3, AK260:3, AK212:3, AK286:3, AK250:3, Ap330:3 Ap <i>377:</i> 3 Ap345:3 Ap383:3 Ap373:3 Ap371:3 Ap380:3 Ap306:2 AP316:3 Ap316:3
				AR235.3, AR211.2, AR243.3, AR262.3, AR2211.3, AR2213.2, AR219.2, AR288.2, AR232.2, AR214.2, AR216.2, AR2111.2, AR260.2, AR169.2, AR2601.2, AR266.3, AR219.2, AR219.2, AR218.2, AR218.2,
				AR204:2, AR053:2, AR289:2, AR172:2, AR256:2, AR104:2, AR210:2, AR225:1, AR242:1, AR061:1,
				AR171:1, AR311:1 L0754:6, S0474:5, L0666:5, L0740:5, H0486:4, L0662:4, L0748:4, L0766:3, H0657:2,
				S0358:2, H0587:2, L0655:2, L0665:2, S0330:2, L0744:2, H0543:2, H0306:1, S0418:1, S0376:1, S0222:1,
				H0574:1, L0471:1, H0057:1, H0594:1, H0687:1, H0031:1, L0142:1, H0032:1, H0413:1, S0426:1, L0768:1,
				L0658:1, L0558:1, L0659:1, L0791:1, L0664:1, H0648:1, S0328:1, S0136:1, H0521:1, H0214:1, L0742:1,
	HDTMK50	906320	673	
	HDTMK50	857362	674	
140	HE2DY70	722217	120	AR252:8, AR215:6, AR242:3, AR225:3, AR201:2, AR180:2, AR266:2, AR231:2, AR181:2, AR271:2,
				AR161:1, AR162:1, AR195:1, AR257:1, AR262:1, AR089:1, AR300:1, AR217:1, AR258:1, AR193:1,
				AR291:1 S0003:3, H0170:1, S0278:1, L0637:1, L0777:1, L0731:1, L0758:1 and L0362:1.
141	HE2EN04	545008	151	AR309:12, AR264:11, AR308:9, AR263:9, AR311:8, AR312:6, AR210:6, AR225:6, AR207:5, AR053:5,
				AR245:5, AR200:5, AR313:4, AR272:4, AR282:4, AR217:4, AR271:4, AR223:4, AR201:4, AR183:4,
				AR212:4, AR196:4, AR193:4, AR246:4, AR270:3, AR274:3, AR203:3, AR162:3, AR161:3, AR163:3,
				AR267:3, AR176:3, AR205:3, AR195:3, AR172:3, AR261:3, AR096:3, AR165:3, AR197:3, AR164:3,
				AR268:2, AR218:2, AR255:2, AR177:2, AR204:2, AR188:2, AR168:2, AR199:2, AR175:2, AR166:2,
				AR316:2, AR060:2, AR216:2, AR236:2, AR089:2, AR266:2, AR288:2, AR171:2, AR213:2, AR178:2,
				AR228:2, AR262:2, AR290:2, AR231:2, AR179:2, AR233:2, AR185:2, AR239:2, AR296:2, AR229:2,
				AR234:2, AR182:2, AR289:2, AR285:2, AR277:1, AR224:1, AR181:1, AR293:1, AR191:1, AR237:1,
				AR227:1, AR219:1, AR286:1, AR173:1, AR291:1, AR269:1, AR295:1, AR190:1, AR258:1, AR055:1,
				AR294:1, AR211:1, AR061:1, AR238:1, AR252:1, AR247:1, AR297:1, AR283:1, AR299:1, AR214:1
				L0749:5, L0662:3, L0665:3, H0144:3, H0519:3, S0418:2, L0518:2, L0663:2, H0690:2, L0740:2, L0779:2,
				H0624:1, H0170:1, T0002:1, S0420:1, S0360:1, H0559:1, H0581:1, L0471:1, H0628:1, H0634:1, H0616:1,
				S0210:1, L0598:1, L0770:1, L0769:1, L0373:1, L0372:1, L0642:1, L0764:1, L0768:1, L0649:1, L0381:1,
				L0650:1, L0806:1, L0655:1, L0657:1, H0684:1, S0152:1, H0631:1, L0751:1, L0596:1, S0011:1 and H0677:1.

142	HE2EV03	306130	150	1AP2255.457 AP215.423 AP223.419 AP214.310 AP170.307 AP169.302 AR296.290 AR171.266
7	60. 13711	701075	761	AR168:246. AR291:231. AR256:206. AR172:159. AR255:156. AR288:155. AR289:150.
				AR285:145, AR295:144, AR224:144, AR217:139, AR297:137, AR235:133, AR266:132, AR216:130,
				AR260:118, AR222:116, AR178:96, AR183:90, AR293:90, AR179:89, AR287:88, AR180:88, AR261:80,
				AR176:80, AR213:77, AR316:76, AR262:74, AR269:71, AR253:71, AR270:70, AR181:69, AR219:68,
				AR258:68, AR283:68, AR173:66, AR290:64, AR210:64, AR294:64, AR250:63, AR175:62, AR236:61,
				AR033:61, AR257:60, AR039:59, AR238:57, AR243:56, AR230:55, AR252:54, AR182:53, AR240:52,
				AR242:52, AR254:52, AR190:51, AR268:51, AR188:50, AR286:50, AR199:49, AR096:48, AR247:48,
				AR205:48, AR104:47, AR282:46, AR245:46, AR218:46, AR237:45, AR189:45, AR212:44, AR229:44,
				AR174:44, AR191:42, AR313:42, AR185:41, AR274:41, AR267:40, AR263:40, AR177:40, AR198:40,
				AR089:40, AR196:39, AR234:39, AR264:39, AR300:37, AR246:37, AR271:37, AR053:37, AR312:37,
				AR163:37, AR299:36, AR162:36, AR161:36, AR193:36, AR195:36, AR309:35, AR204:35, AR200:34,
				AR201:34, AR211:33, AR166:33, AR165:33, AR060:33, AR226:32, AR272:32, AR275:32, AR203:32,
				AR192:32, AR311:32, AR308:32, AR227:31, AR164:31, AR055:31, AR231:30, AR233:28, AR197:28,
				AR232:27, AR239:26, AR228:26, AR061:24, AR277:23, AR207:23 L0666:5, L0438:5, L0439:4, L0731:4,
				L0471:3, H0547:3, H0170:2, H0586:2, S6028:2, H0539:2, S0146:2, L0740:2, L0752:2, S0192:2, S0242:2,
				H0171:1, L0002:1, L0005:1, S0408:1, S0222:1, H0331:1, H0156:1, H0575:1, H0309:1, H0597:1, T0067:1,
				L0598:1, H0529:1, L0520:1, L0768:1, L0803:1, L0774:1, L0775:1, L0776:1, L0659:1, L0517:1, L0518:1,
				L0665:1, S0378:1, L0779:1, L0777:1, L0759:1, L0588:1, S0026:1 and H0506:1.
143	HE2NV57	740750	153	AR235:6, AR282:4, AR309:4, AR171:4, AR270:4, AR178:3, AR272:3, AR245:3, AR269:3, AR291:3,
				AR169:3, AR268:3, AR213:3, AR215:3, AR254:3, AR267:3, AR289:3, AR274:3, AR236:3, AR175:3,
	_			AR053:3, AR228:3, AR261:3, AR242:2, AR161:2, AR181:2, AR308:2, AR300:2, AR257:2, AR238:2,
				AR182:2, AR266:2, AR204:2, AR237:2, AR170:2, AR288:2, AR290:2, AR188:2, AR297:2, AR168:2,
				JR262:2, AR162:2, AR163:2, AR296:2, AR233:2, AR210:2, AR285:2, AR295:2, AR264:2, AR293:2,
				AR165:2, AR229:2, AR201:2, AR189:2, AR250:2, AR164:2, AR221:2, AR195:2, AR222:2, AR223:2,
				AR239.2, AR231:2, AR294.2, AR166.2, AR191:2, AR179:2, AR255:2, AR271:2, AR287:2, AR212:2,
				AR234:2, AR299:2, AR225:2, AR203:2, AR246:2, AR200:2, AR205:1, AR089:1, AR173:1, AR176:1,
				[AR240:1, AR286:1, AR193:1, AR199:1, AR258:1, AR196:1, AR232:1, AR096:1, AR243:1, AR312:1,
				AR185:1, AR061:1, AR183:1, AR230:1, AR060:1 S0414:3, L0805:3, S0412:3, H0457:2, L0756:2, H0170:1,
				H0645:1, H0455:1, H0421:1, H0100:1, L0803:1, S0052:1, S0374:1, H0696:1 and L0743:1.
144	HE2PD49	638617	154	AR284:121, AR096:105, AR202:80, AR184:79, AR281:73, AR194:71, AR290:63, AR265:54, AR183:54,
				AR283:52, AR269:52, AR315:48, AR314:46, AR240:45, AR206:45, AR310:44, AR241:43, AR182:42,
				AR251:42, AR267:42, AR280:41, AR244:38, AR237:36, AR249:36, AR313:36, AR234:33, AR289:33,
				AR055:32, AR285:32, AR246:31, AR039:31, AR270:30, AR266:29, AR298:29, AR316:27, AR299:27,

			;	AR186:27, AR033:27, AR292:26, AR198:26, AR243:26, AR205:25, AR282:25, AR053:24, AR247:24,
				AR277:22, AR300:21, AR185:21, AR218:21, AR061:21, AR175:21, AR294:21, AR293:20, AR268:20,
				AR229:20, AR238:20, AR219:20, AR256:19, AR179:19, AR248:19, AR309:19, AR275:18, AR227:18,
				AR226:12, AR165:12, AR191:12, AR164:11, AR171:11, AR166:11, AR258:10, AR170:10, AR188:9,
				AR180:9, AR190:9, AR172:9, AR174:9, AR200:9, AR181:9, AR217:9, AR169:9, AR272:9, AR264:8,
				AR176:8, AR252:8, AR211:8, AR168:8, AR189:7, AR173:7, AR193:7, AR197:7, AR216:7, AR255:7,
				AR261:6, AR199:6, AR260:6, AR235:6, AR311:6, AR225:6, AR236:6, AR257:6, AR239:6, AR178:5,
				AK288:3, AK287:3, AK221:3, AK224:3, AK228:3, AK308:3, AK262:3, AK297:3, AK214:3, AK193:3, AR215:4_AR212:4_AR250:4_AR203:4_AR223:4_AR201:4_AR245:3_AR230:3_AR2203:3_AR207:3_
	•			AR254:1 L0439:11, L0770:4, L0659:4, L0663:4, L0740:4, S0126:3, L0747:3, L0750:3, H0013:2, S0474:2,
				S0214.2, S0440.2, L0774.2, H0519.2, S0380.2, L0749.2, L0755.2, L0759.2, H0171:1, H0556:1, S0040:1,
				H0583:1, H0656:1, H0255:1, S0408:1, H0637:1, H0733:1, S0045:1, T0040:1, H0427:1, H0599:1, H0618:1,
				H0581:1, H0052:1, L0738:1, L0471:1, H0014:1, H0594:1, S6028:1, T0086:1, H0124:1, H0090:1, H0591:1,
				H0038:1, H0616:1, H0551:1, S0150:1, S0426:1, L0763:1, L0769:1, L0638:1, L0772:1, L0771:1, L0521:1,
				L0775:1, L0806:1, L0805:1, L0776:1, L0542:1, L0666:1, L0664:1, L0710:1, L0438:1, H0547:1, H0521:1,
				S0404:1, S0406:1, H0576:1, S3014:1, L0742:1, L0731:1, L0758:1, H0595:1, S0436:1, H0665:1 and H0422:1.
145	HE2PY40	753229	155	JAR197:7, AR266:5, AR176:5, AR309:5, AR282:4, AR204:4, AR183:4, AR267:4, AR269:4, AR272:4,
				AR193:4, AR178:4, AR195:4, AR246:3, AR182:3, AR291:3, AR165:3, AR235:3, AR233:3, AR164:3,
				AR217:3, AR237:3, AR264:3, AR270:3, AR166:3, AR168:3, AR175:3, AR297:3, AR268:3, AR162:3,
				AR221:3, AR243:3, AR161:3, AR239:3, AR289:3, AR163:3, AR089:3, AR053:3, AR181:3, AR215:3,
				AR039:3, AR293:3, AR286:3, AR296:3, AR201:3, AR252:3, AR060:3, AR288:3, AR188:3, AR285:3,
				AR224:3, AR295:3, AR225:2, AR287:2, AR173:2, AR196:2, AR250:2, AR294:2, AR179:2, AR203:2,
				AR223:2, AR283:2, AR290:2, AR274:2, AR190:2, AR316:2, AR191:2, AR238:2, AR277:2, AR312:2,
				AR260:2, AR229:2, AR212:2, AR033:2, AR254:2, AR205:2, AR189:2, AR199:2, AR275:2, AR308:2,
				AR180:2, AR271:2, AR200:2, AR214:1, AR247:1, AR177:1, AR171:1, AR313:1, AR236:1, AR096:1,
				AR219:1, AR256:1, AR211:1, AR300:1, AR218:1, AR232:1 H0624:1 and H0171:1.
146	HE6EU50	411998	156	AR253:63, AR250:44, AR254:37, AR243:37, AR245:31, AR264:30, AR312:27, AR309:27, AR197:26,
				AR263:25, AR053:25, AR212:25, AR246:23, AR096:23, AR213:21, AR308:20, AR039:18, AR311:16,
				AR198:16, AR161:16, AR162:16, AR195:15, AR163:15, AR165:15, AR089:15, AR164:14, AR180:14,
				AR272:14, AR166:14, AR296:13, AR271:13, AR207:12, AR286:12, AR291:12, AR275:12, AR173:12,
				AR205:11, AR295:11, AR193:11, AR313:11, AR240:10, AR268:10, AR178:10, AR266:10, AR201:10,

				AR192:10, AR252:10, AR270:9, AR176:9, AR316:9, AR181:9, AR297:9, AR269:9, AR293:8, AR242:8, AR183:8, AR280:8, AR285:8, AR282:8, AR294:7, AR195:7, AR204:7, AR060:7, AR229:7, AR289:7, AR288:7, AR288:7, AR288:7, AR299:5, AR299:5, AR299:7, AR288:7, AR288:7, AR288:7, AR299:5, AR299:5, AR288:7, A
				AR218:5, AR182:5, AR185:5, AR228:5, AR287:5, AR300:5, AR257:5, AR259:5, AR001:4, AR053:4, AR238:4, AR238:4, AR277:4, AR211:4, AR226:4, AR189:4, AR230:4, AR190:4, AR170:4, AR234:3, AR233:3, AR277:3, AR277:3, AR178:3, AR174:3, AR191:3, AR258:3, AR256:2, AR104:2, AR168:2,
				AR223:2, AR188:1, AR214:1, AR225:1, AR216:1, AR224:1, AR257:1 L0748:3, L0749:3, H0100:1 and L0753:1.
147	HE8MH91	589450	157	AR252:322, AR253:174, AR055:138, AR245:118, AR246:97, AR060:92, AR250:86, AR308:84, AR263:80, AR252:322, AR203:71, AR205:70, AR312:68.
				AR212:67, AR198:62, AR309:59, AR089:55, AR271:53, AR283:52, AR264:51, AR299:51,
				AK195:50, AK311:47, AK201:45, AK096:45, AK185:40, AK274:59, AK510:56, AK502:57, AK500:54, AR504:33 AR313:32 AR540:29 AR542:28, AR207:28, AR213:27, AR193:25, AR192:25, AR219:25,
				AR277:20, AR218:20, AR033:18, AR163:18, AR166:17, AR162:17, AR165:17, AR161:17, AR164:16,
				AR247:10, AR180:5, AR168:4, AR214:3, AR215:3, AR061:2, AR183:2, AR291:2, AR178:2, AR289:2,
				AR266:1, AR216:1, AR170:1, AR257:1, AR176:1, AR269:1, AR238:1, AR225:1, AR217:1, AR286:1,
				AR171:1 S0422:4, L0589:4, L0766:3, L0803:2, H0547:2, L0754:2, S0436:2, L2919:1, S0358:1, S0444:1, H0558:1, H0690:1, H069
				1.0541:1. 1.0774:1. 1.5622:1. 1.0789:1. 1.0666:1. H0144:1. 1.3828:1. H0520:1. H0519:1. S0126:1. H0666:1.
				H0672:1, H0539:1, L0750:1, L0779:1, L0755:1, L0731:1, S0434:1, L0593:1 and H0423:1.
148	HE8QV67	1050076	158	AR104:11, AR299:9, AR089:9, AR055:9, AR219:9, AR060:8, AR218:8, AR039:7, AR283:7, AR316:7,
	,			AR282:7, AR277:7, AR313:6, AR300:6, AR240:6, AR185:6, AR096:6 L0748:8, L0439:8, S0404:7, L0766:6,
				H0144:5, H0052:4, L0769:4, L0752:4, L0758:4, H0556:3, H0024:3, H0163:3, T0041:3, L0646:3, L0768:3,
				L0776:3, L0740:3, H0624:2, H0265:2, S0444:2, S0408:2, S0046:2, H0333:2, H0486:2, H0383:2, L0770:2,
				L0649;2, L0659;2, L0666;2, S0374;2, H0547;2, H0436;2, L0751;2, L0745;2, L0747;2, L0759;2, L0597;2,
				L0593:2, H0171:1, S0342:1, H0657:1, S0116:1, H0384:1, H0662:1, S0442:1, S0358:1, H0735:1, S0007:1,
	•			S0045:1, H0749:1, S0300:1, S0278:1, S0222:1, H0013:1, H0581:1, H0421:1, H0046:1, H0009:1, L0157:1,
				H0620:1, H0014:1, H0051:1, T0006:1, H0617:1, S0036:1, H0135:1, H0038:1, S0038:1, L0351:1, S0440:1,
				80142:1, H0529:1, L0796:1, L0772:1, L0641:1, L0642:1, L0643:1, L0764:1, L0774:1, L0775:1, L0375:1,
				L0651:1, L0805:1, L0657:1, L0383:1, L0809:1, L0663:1, S0052:1, L0352:1, S0126:1, H0689:1, H0690:1,
				H0670:1, H0648:1, S0378:1, S0044:1, L0744:1, L0754:1, L0756:1, L0786:1, L0779:1, L0777:1, L0753:1,
				L0731:1, L0592:1, L0599:1, L0608:1, L0595:1, H0667:1 and H0008:1.
	HE8QV67	1050077	675	
149	HE8UB86	834913	159	AR266:6, AR176:5, AR183:5, AR192:5, AR182:4, AR215:4, AR181:4, AR274:4, AR055:4, AR235:4,

				AR269:4, AR223:4, AR217:4, AR236:4, AR228:4, AR060:4, AR178:3, AR224:3, AR257:3, AR165:3,
				AR229:3, AR270:3, AR233:3, AR168:3, AR161:3, AR268:3, AR166:3, AR162:3, AR163:3, AR237:3,
		-		AR164:3, AR214:3, AR253:3, AR261:3, AR267:3, AR225:3, AR179:3, AR177:3, AR293:3, AR180:3,
				AR296:3, AR212:3, AR247:3, AR175:3, AR191:2, AR289:2, AR238:2, AR282:2, AR222:2, AR231:2,
				AR291:2, AR294:2, AR196:2, AR039:2, AR277:2, AR262:2, AR199:2, AR245:2, AR240:2, AR255:2,
				AR295:2, AR288:2, AR216:2, AR297:2, AR089:2, AR061:2, AR200:2, AR239:2, AR174:2, AR201:2,
				AR309:2, AR188:2, AR190:2, AR300:2, AR203:2, AR271:2, AR230:2, AR285:2, AR234:2, AR316:2,
				AR189:2, AR299:2, AR226:2, AR185:2, AR227:2, AR286:2, AR275:2, AR193:2, AR172:2, AR096:2,
				AR232:2, AR104:2, AR313:2, AR221:2, AR195:2, AR290:2, AR283:2, AR258:1, AR287:1, AR219:1,
				AR264:1, AR173:1, AR312:1, AR218:1, AR210:1, AR169:1 H0030:2, H0624:1, H0013:1, L0769:1, L0803:1
				and L0438:1.
150	HE9BK23	675382	091	AR238:18, AR226:16, AR239:12, AR232:10, AR060:9, AR237:8, AR228:8, AR055:6, AR227:6, AR231:5,
	•			AR283:4, AR197:4, AR229:4, AR176:4, AR282:4, AR104:4, AR089:4, AR230:4, AR253:3, AR233:3,
				AR234:3, AR205:3, AR240:3, AR185:3, AR207:3, AR204:3, AR316:3, AR096:3, AR312:3, AR264:3,
				AR223:3, AR182:3, AR245:3, AR201:3, AR299:3, AR289:2, AR218:2, AR250:2, AR246:2, AR164:2,
				AR300:2, AR166:2, AR271:2, AR168:2, AR275:2, AR257:2, AR257:2, AR161:2, AR162:2, AR039:2,
				AR212:2, AR163:2, AR216:2, AR225:2, AR053:2, AR269:2, AR309:2, AR277:2, AR165:2, AR268:2,
				AR171:2, AR313:2, AR267:2, AR190:2, AR175:2, AR311:2, AR254:2, AR215:2, AR291:2, AR199:2,
				AR247:2, AR236:2, AR266:2, AR180:2, AR198:2, AR196:2, AR183:2, AR296:2, AR033:2, AR287:2,
				AR061:2, AR270:2, AR294:1, AR308:1, AR295:1, AR193:1, AR214:1, AR262:1, AR178:1, AR261:1,
				AR191:1, AR181:1, AR179:1, AR219:1, AR256:1, AR297:1, AR274:1, AR293:1, AR290:1, AR172:1,
				AR195:1, AR200:1, AR203:1, AR255:1, AR189:1, AR188:1, AR243:1, AR169:1, AR285:1, AR224:1,
				AR173:1 L0803:10, H0510:4, H0741:3, H0730:2, L3388:2, H0355:2, S0438:2, L0581:2, H0722:1, H0393:1,
				[H0574:1, H0746:1, H0014:1, H0509:1, L0804:1, L0790:1, H0144:1 and L0748:1.
151	HE9C069	296829	161	AR275:30, AR205:25, AR039:23, AR207:23, AR309:18, AR162:16, AR161:16, AR163:16, AR264:15,
				AR197:15, AR061:15, AR089:14, AR165:14, AR198:14, AR204:14, AR104:14, AR164:14, AR263:14,
				AR195:13, AR166:13, AR053:13, AR193:13, AR060:13, AR176:13, AR201:12, AR235:12, AR242:12,
				AR239:12, AR313:12, AR033:12, AR212:12, AR181:12, AR169:12, AR245:12, AR299:12, AR268:12,
				AR214:12, AR312:12, AR246:11, AR185:11, AR282:11, AR192:11, AR237:11, AR226:11, AR238:11,
				AR229:11, AR269:11, AR272:11, AR288:11, AR311:11, AR271:11, AR266:11, AR250:11, AR223:10,
				AR225:10, AR316:10, AR096:10, AR261:10, AR267:10, AR178:10, AR228:10, AR233:10, AR231:10,
				AR224:10, AR254:9, AR174:9, AR217:9, AR308:9, AR296:9, AR216:9, AR291:9, AR213:9, AR182:9,
				AR222:9, AR300:9, AR215:9, AR183:9, AR180:9, AR274:9, AR253:9, AR172:9, AR177:9, AR252:9,
				AR210:9, AR277:9, AR240:9, AR295:9, AR175:9, AR289:9, AR293:9, AR171:9, AR232:9, AR270:8,

				AR170:8, AR221:8, AR287:6, AR180:9, AR285:7, AR255:7, AR286:7, AR286:7, AR284:8, AR284:8, AR287:7, AR286:7, AR286:7, AR284:8, AR173:7, AR286:7, AR286:7, AR285:7, AR285:7, AR286:7, AR286:7, AR286:8, AR179:7, AR276:6, AR296:6, AR219:6, AR190:6, AR294:6, AR296:6, AR286:6, AR298:7, AR287:7, AR287:6, AR286:5, AR286:5, AR218:6, AR199:5, AR286:5, AR286:1, L0769:4, L0769:4, L0769:4, L0767:4, L0757:4, S0422:6, L0752:6, L0752:6, L0759:5, L0759:5, S0212:4, S0045:2, L0769:4, L0769:4, L0769:4, L0769:4, L0769:4, L0769:4, L0769:4, L0769:4, L0769:4, L0769:2, L0769:2, L0769:2, L0776:2, L0776:2, L0776:2, L0776:2, L0766:2, L0776:2, L0776:2, L0776:2, L0776:2, L0766:2, L0776:2, L0776:2, L0776:2, L0769:1, L0785:1, L0785:1, L0785:1, L0785:1, L0785:1, L0778:1, H0669:1, L0669:1, L0793:1, L07
152	HE9CP41	560625	162	AR170:5, AR223:3, AR225:3, AR168:2, AR266:2, AR252:2, AR309:2, AR264:2, AR221:2, AR243:2, AR170:5, AR223:3, AR235:3, AR239:1, AR296:1, AR296:1, AR296:1, AR296:1, AR296:1, AR296:1, AR282:1, AR311:1 H0421:1 and H0144:1.
153	HE9DG49	1299935	163	AR223:36, AR214:32, AR225:26, AR299:18, AR215:15, AR216:15, AR310:15, AK312:14, AK261:13, AR280:13, AR265:12, AR309:12, AR277:12, AR282:12, AR314:11, AR300:11, AR263:11, AR052:11, AR280:13, AR265:12, AR309:12, AR277:12, AR218:9, AR219:9, AR241:9, AR231:9, AR205:8, AR168:8, AR264:8, AR308:8, AR266:8, AR166:8, AR186:8, AR219:9, AR271:7, AR172:7, AR311:7, AR216:7, AR267:7, AR210:7, AR161:7, AR162:7, AR162:7, AR162:7, AR207:7, AR172:7, AR311:7, AR169:7, AR267:7, AR207:7, AR210:7, AR161:7, AR162:7, AR162:7, AR207:4, AR207:6, AR164:6, AR273:6, AR207:6, AR271:6, AR207:6, AR271:6, AR207:6, AR207:4, AR207:4, AR245:4, AR204:5, AR313:5, AR269:5, AR313:5, AR269:5, AR313:5, AR269:3, AR207:4, AR227:4, AR207:4, AR207:3, AR188:3, AR207:3, AR207:3, AR188:3, AR207:3, AR207:2, AR207:2, AR207:2, AR207:3, AR207:3, AR207:3, AR207:2,

				S0440:2, L0772:2, L0764:2, L0768:2, L0775:2, L0743:2, L0747:2, H0218:1, S0040:1, S0212:1, S0442:1, S0360:1, S046:1, S0442:1, S0360:1, S046:1,
				10649:1, 1568:1, 10774:1, 10806:1, 10783:1, 10791:1, 10792:1, 14501:1, 10666:1, 10663:1, 10665:1, 1066
	HE9DG49	658678	9/9	
	HE9DG49	382000	<i>LL</i> 9.	
154	HE90W20	1352337	164	AR161:9, AR162:9, AR163:9, AR241:8, AR186:6, AR250:6, AR180:5, AR223:5, AR181:5, AR176:5,
				MRI30:3, MR200:3, MR202:3, MR220:3, MR231:4, MR103:4, MR203:4, MR303:4, MR104:4, MR203:4, MR2
				AR182:4, AR255:4, AR055:4, AR273:4, AR173:4, AR061:3, AR236:3, AR060:3, AR239:3, AR229:3,
				AR270.3, AR204.3, AR199.3, AR274.3, AR269.3, AR288.3, AR267.3, AR242.3, AR262.3, AR272.3,
				AR233:3, AR201:3, AR203:3, AR205:3; AR266:3, AR246:3, AR183:3, AR200:3, AR282:3, AR213:3,
				AR193:3, AR240:3, AR174:3, AR188;3) AR309:3, AR189:3, AR052:3, AR237:3, AR190:3, AR296:3,
				AR243:3, AR293:3, AR268:3, AR179:3, AR207:3, AR287:3, AR185:3, AR291:3, AR312:2, AR184:2,
				AR221:2, AR313:2, AR234:2, AR295:2, AR247:2, AR238:2, AR245:2, AR230:2, AR226:2, AR033:2,
				AR299.2, AR289.2, AR277:2, AR297.2, AR275:2, AR224:2, AR175:2, AR249:2, AR231:2, AR227:2,
				JAR089:2, AR300:2, AR298:2, AR271:2, AR197:2, AR290:2, AR177:2, AR316:2, AR311:2, AR169:2,
				AR285:2, AR244:2, AR283:2, AR214:2, AR253:2, AR212:2, AR172:2, AR168:2, AR258:2, AR294:2,
				AR292.2, AR286.2, AR195.2, AR232.2, AR104.2, AR171.2, AR039.2, AR096.2, AR284.2, AR198.2,
				AR217.2, AR308.1, AR218.1, AR260.1, AR216.1, AR256.1 H0570:1, S0210:1, L0792.1, H0144:1, L0595:1,
				H0543:1 and L0690:1.
	HE90W20	838298	829	
	HE90W20 •	834400		1
155	HE9RM63	886167	591	AR096:6, AR235:5, AR250:4, AR18333, AR270:3, AR269:3, AR173:3, AR290:3, AR268:3, AR216:3,
				AR215:3, AR254:2, AR053:2, AR193:2;;AR309:2, AR180:2, AR291:2, AR313:2, AR196:2, AR191:2,
				AR178:2, AR225:2, AR271:2, AR176:2, AR190:2, AR189:2, AR288:1, AR060:1, AR089:1, AR226:1,
				[AR210:1, AR168:1, AR285:1, AR175:1, AR297:1, AR255:1, AR267:1, AR231:1, AR181:1, AR257:1,
				AR299:1 H0549:1, H0013:1, H0036:1, H0263:1, H0099:1, S0250:1, L0663:1, L0665:1, H0144:1, L0756:1,
				L0755:1 and L0759:1.
156	HEAAR07	561524	166	AR308:11, AR053:10, AR264:10, AR309:10, AR269:9, AR312:9, AR176:8, AR266:8, AR178:8, AR197:8,
				AR201:8, AR181:8, AR161:8, AR162:8, AR163:8, AR183:7, AR313:7, AR270:7, AR252:7, AR182:7,
				AR228:7, AR089:7, AR263:7, AR282:7, AR180:7, AR267:7, AR193:7, AR165:7, AR224:6, AR268:6,
				AR204:6, AR213:6, AR164:6, AR236:6, AR293:6, AR257:6, AR166:6, AR291:6, AR290:6, AR299:6,

THIS PAGE BLANK (USPTO)

				AR229:6, AR175:6, AR179:6, AR253:5, AR261:5, AR233:5, AR096:5, AR294:5, AR226:5, AR177:5, AR271:5, AR243:5, AR300:5, AR287:5, AR2271:5, AR247:5, AR243:5, AR245:5, AR245:5, AR245:5, AR245:5, AR245:5, AR245:5, AR245:5, AR245:5, AR245:5, AR
				AR316:5, AR214:5, AR255:5, AR212:5, AR285:5, AR238:5, AR242:5, AR188:5, AR289:4, AR231:4,
				AR262:4, AR196:4, AR296:4, AR198:4, AR217:4, AR311:4, AR288:4, AR203:4, AR199:4, AR061:4,
				AR191:4, AR286:4, AR055:4, AR174:4, AR258:4, AR234:4, AR190:4, AR272:3, AR185:3, AR297:3,
	•			AR246:3, AR205:3, AR240:3, AR189:3, AR295:3, AR033:3, AR250:3, AR207:3, AR232:3, AR277:3,
				AR256:3, AR219:3, AR195:3, AR235:2, AR260:2, AR230:2, AR039:2, AR216:2, AR275:2, AR274:2,
				AR283:2, AR245:2, AR210:2, AR218:2, AR200:2, AR169:1, AR172:1 H0369:1
157	HEBAE88	526417	167	AR282:3, AR170:3, AR169:2, AR225:2, AR039:2, AR171:2, AR197:2, AR217:2, AR271:2, AR182:2,
				AR191:2, AR207:1, AR168:1, AR177:1, AR224:1, AR161:1, AR211:1, AR104:1, AR216:1, AR215:1,
-				AR285:1 H0637:1, S0007:1 and L0608:1.
158	HEBBN36	486120	891	AR197:8, AR309:6, AR055:6, AR162:5, AR161:5, AR215:5, AR163:5, AR198:5, AR246:5, AR060:5,
				AR176:5, AR165:4, AR166:4, AR164:4, AR178:3, AR104:3, AR201:3, AR282:3, AR283:3, AR229:3,
				AR089:3, AR033:3, AR216:3, AR183:3, AR039:3, AR228:3, AR180:3, AR274:3, AR170:3, AR181:3,
				AR311:3, AR233:3, AR177:3, AR096:2, AR207:2, AR179:2, AR312:2, AR239:2, AR061:2, AR300:2,
				AR182:2, AR268:2, AR185:2, AR271:2, AR237:2, AR224:2, AR296:2, AR263:2, AR243:2, AR270:2,
				AR289:2, AR316:2, AR299:2, AR272:2, AR261:2, AR226:2, AR286:2, AR204:2, AR175:2, AR193:2,
				AR227:2, AR173:2, AR230:2, AR212:2, AR294:2, AR231:2, AR189:2, AR255:2, AR200:2, AR291:2,
				AR205:2, AR293:2, AR225:2, AR213:1; AR313:1, AR222:1, AR287:1, AR267:1, AR190:1, AR257:1,
				AR247:1, AR264:1, AR240:1, AR290:1, AR297:1, AR218:1, AR199:1, AR232:1, AR277:1, AR196:1,
				AR308:1 S0007:3, L0777:3, L0754:2, L0749:2, H0599:1, H0328:1, T0042:1, L0804:1, L0784:1, L0805:1,
				L0659:1, L0791:1, L0779:1 and L0731:1.
159	HEBCM63	484643	169	AR251:5, AR206:5, AR182:4, AR052:4, AR183:4, AR273:4, AR055:4, AR060:4, AR186:4, AR270:3,
				AR282:3, AR218:3, AR269:3, AR176:3, AR202:3, AR061:3, AR313:3, AR219:3, AR172:3, AR310:3,
				AR175:3, AR249:3, AR171:3, AR053:3, AR268:3, AR246:3, AR033:3, AR184:3, AR267:2, AR104:2,
	-			AR253:2, AR195:2, AR162:2, AR298:2, AR309:2, AR236:2, AR289:2, AR312:2, AR161:2, AR213:2,
				AR163:2, AR277:2, AR178:2, AR316:2, AR255:2, AR096:2, AR196:2, AR204:2, AR275:2, AR089:2,
				AR229:2, AR300:2, AR244:2, AR185:2, AR173:2, AR192:2, AR265:2, AR257:2, AR283:2, AR292:2,
				AR290:2, AR293:2, AR181:2, AR284:2, AR299:2, AR240:2, AR174:2, AR261:2, AR205:1, AR039:1,
				AR264:1, AR168:1, AR239:1, AR241:1, AR266:1, AR271:1, AR286:1, AR294:1, AR243:1, AR228:1,
				AR238:1, AR230:1, AR287:1, AR247:1, AR199:1, AR177:1, AR179:1, AR291:1, AR233:1, AR232:1,
				AR285:1, AR296:1, AR295:1, AR225:1, AR272:1, AR203:1, AR281:1, AR231:1, AR165:1 L0771:5,
				S0007:3, L0794:3, L0439:3, H0657:2, L0662:2, L0766:2, L0659:2, H0670:2, L0731:2, L0757:2, L0758:2,
				50436:2, H0624:1, 50134:1, 50356:1, 50408:1, H0/35:1, H0/4/:1, 50020:1, H0400:1, L3030:1, 50474:1,

				H0644:6, H0606:6, H0616:6, S0210:6, S0426:6, L0381:6, L0388:6, L0655:6, L0383:6, H0520:6, H0689:6, H0672:6, L0602:6, H0214:6, H0626:6, H0159:5, H0661:5, H0619:5, L0717:5, H0544:5, H0050:5, H0012:5,
				H0024:5, T0010:5, H0594:5, H0188:5, S0003:5, H0213:5, H0181:5, H0268:5, S0038:5, H0429:5, H0646:5, S0143:4, S01
		•		S0142.1, 50206.1, E0703.1, E0703.1, E0706.2, E0706.5, H0624.4, T0049.4, S0116.4, H0662.4, H0402.4,
				H0550:4, H0441:4, H0438:4, H0643:4, T0109:4, H0075:4, H0156:4, S0010:4, S0346:4, S0182:4, H0327:4,
				H0546:4, H0051:4, S0051:4, H0553:4, L0456:4, H0413:4, L0637:4, L0764:4, L0648:4, L0768:4, L0375:4,
				L0518:4, H0690:4, L0745:4, L0777:4, L0589:4, H0422:4, H0218:3, S0134:3, H0664:3, H0458:3, S0330:3,
				50354:3, 503/6:3, H0261:3, H0349:3, H0453:3, 10000:3, H0427:3, 10042:3, 10062:3, 110050:3, 110050:3, 110050:3, H0427:3, H0267:3, H0267:3, H0615:3, H0039:3, H0006:3,
				H0068:3, H0163:3, H0272:3, L0564:3, H0280:3, H0130:3, L0771:3, L0387:3, L0376:3, L0368:3,
				H0648:3, S0330:3, H0539:3, S0044:3, S0390:3, S0260:3, H0444:3, L0587:3, H0653:3, L0600:3, H0170:2,
				H0149.2, H0686.2, H0685.2, H0294.2, S0114.2, H0583.2, S0180.2, S0298.2, S0282.2, H0306.2, H0449.2,
				H0459:2, H0675:2, H0747:2, H0393:2, S0300:2, H0437:2, H0592:2, S0005:2, H0574:2, H0256:2, L0623:2,
				L0586:2, T0103:2, H0150:2, H0041:2, N0006:2, H0172:2, H0081:2, H0200:2, N0007:2, H0071:2, H0355:2,
				S0312:2, S0250:2, H0328:2, H0688:2, L0483:2, H0033:2, H0031:2, L0142:2, L0143:2, H0032:2, L0455:2,
				\$0366:2, H0316:2, H0598:2, L0351:2, H0366:2, H0509:2, H0132:2, H0647:2, S0422:2, L0762:2, L0638:2,
		-		L0642:2, L0521:2, L0386:2, L0804:2, L0540:2, S0006:2, S0148:2, S0380:2, H0710:2, H0576:2, S0392:2,
				S0206:2, L0741:2, L0779:2, L0753:2, H0595:2, S0436:2, L0605:2, L0590:2, L0604:2, L0366:2, H0216:2,
				H0395:1, H0219:1, H0224:1, H0225:1, H0161:1, H0220:1, H0158:1, H0222:1, S6024:1, H0656:1, L0785:1,
				L3814:1, H0419:1, S0001:1, H0484:1, H0254:1, H0671:1, H0176:1, L3659:1, H0305:1, S0348:1, L0005:1,
				T00008:1, L0428:1, L3645:1, H0637:1, H0208:1, H0645:1, S6026:1, H0351:1, L0394:1, S0220:1, H0392:1,
				H0357:1, H0409:1, H0403:1, H0282:1, H0600:1, H0362:1, H0331:1, H0491:1, H0485:1, H0270:1, T0112:1,
				H0098:1, H0122:1, H0390:1, T0048:1, H0505:1, H0251:1, H0085:1, H0183:1, H0205:1, H0397:1, H0231:1,
				H0121:1, H0439:1, L0041:1, H0009:1, N0003:1, S0050:1, L0163:1, S0388:1, H0275:1, H0399:1, H0354:1,
				H0271:1, H0416:1, S0318:1, S0316:1, S0214:1, H0428:1, H0604:1, H0180:1, H0182:1, L0055:1, H0165:1,
				H0166:1, H0673:1, H0674:1, H0361:1, H0189:1, H0400:1, T0067:1, H0379:1, H0488:1, H0433:1, H0269:1,
				H0022:1, T0041:1, H0512:1, L0475:1, S0382:1, S0464:1, S0306:1, S0440:1, H0131:1, H0633:1, H0026:1,
				L0520:1, L0640:1, L0371:1, L0667:1, L0772:1, L0373:1, L0374:1, L0765:1, L0773:1, L0766:1, L0561:1,
				[L0650:1, L0651:1, L0806:1, L0661:1, L0629:1, L0628:1, L0527:1, L0636:1, L0542:1, L0526:1, L0783:1,
				L0790:1, S0052:1, S0428:1, H0684:1, H0187:1, H0436:1, H0478:1, L0609:1, L0612:1, L0780:1, L0759:1,
	•			L0581:1, L0361:1, H0217:1, S0276:1, S0042:1 and H0775:1.
191	HEEAG23	684254	171	AR313:22, AR039:19, AR299:16, AR089:15, AR277:14, AR300:11, AR104:11, AR060:11, AR185:11, AR096:11, AR316:10, AR055:9, AR218:9, AR240:7, AR282:7, AR283:6, AR219:5 S0358:10, L0766:4,

S0196:4, H0556:3, S0222:3, S0474:3, H0436:3, L0754:2, H0255:2, H0735:2, H0735:2, H0755:2, H0755:2, L0806:2, H0521:2, L0748:2, L0740:2, L0747:2, L0758:2, L0362:2, S0242:2, H0717:1, H0656:1, L2902:1, S0030:1, H0484:1, S0420:1, H0747:1, H0393:1, L3311:1, S0300:1, S0278:1, H0549:1, L0623:1, H0635:1, H0194:1, H0596:1, H0123:1, H0375:1, H0386:1, H0328:1, H0622:1, H0038:1, H0649:1, L0777:1, L0382:1, L0777:1, L0382:1, H0659:1, H0659:1, H0659:1, H0660:1, H0648:1, H0672:1, S0380:1, H0518:1, H0696:1, S0027:1, L0744:1, L0745:1, L0762:1, L0757:1, S0436:1, L0592:1, L0757:1, S0436:1, L0592:1, H0543:1, H0542:1, L0743:1, L0745:1, L0745:1, L0752:1, L0757:1, S0436:1, L0592:1, L0745:1, L0745:1, L0745:1, L0752:1, L0757:1, S0436:1, L0592:1, L0745:1, L0745:1, L0743:1, L07	HEEAJU2 633657 172 AR194:87, AR204:47, AR206:45, AR202:34, AR224:33, AR273:37, AR310:35, AR204:31, AR206:30, AR208:26, AR204:26, AR197:25, AR005:25, AR192:25, AR204:24, AR186:24, AR186:24, AR208:20, AR208:23, AR208:21, AR208:2	163 HEEAQ11 777843 173 AR271:5, AR060:4, AR055:4, AR163:4, AR162:3, AR197:3, AR171:1, AR201:3, AR192:3, AR294:3, AR294:3, AR294:3, AR294:3, AR294:3, AR294:3, AR295:2, AR295:2, AR295:2, AR295:2, AR295:2, AR295:2, AR296:2, AR168:2, AR168:2, AR168:2, AR168:2, AR172:2, AR185:2, AR296:2, AR296:2, AR295:3, AR296:2, AR296:2

				AR089:2, AR264:2, AR266:2, AR164:2, AR275:2, AR250:2, AR243:2, AR272:2, AR104:2, AR300:2,
				AR180:2, AR293:2, AR171:2, AR181:2, AR290:2, AR291:2, AR233:2, AR253:2, AR090:2, AR297:2, AR286:2, AR176:2, AR283:2, AR225:2, AR213:2, AR061:2, AR169:2, AR261:2, AR263:2, AR053:2,
	,			AR288:2, AR299:2, AR170:2, AR316:2, AR247:2, AR254:2, AR207:2, AR308:2, AR311:2, AR287:2,
				AR182:2, AR277:2, AR178:1, AR294:1, AR218:1, AR174:1, AR188:1, AR295:1, AR196:1, AR228:1,
				AR203:1, AR313:1, AR285:1, AR222:1, AR237:1, AR257:1, AR224:1, AR229:1, AR190:1, AR234:1,
				AR200:1, AR195:1, AR239:1, AR268:1, AR179:1, AR232:1 L0758:4, L0794:3, H0549:2, H0038:2, L0768:2,
			-	L0779:2 and L0767:1.
<u>1</u>	HEGAN94	885637	174	AR096:97, AR219:85, AR313:60, AR089:59, AR218:51, AR039:50, AR299:43, AR265:41, AR262:40,
				AR316:38, AR185:36, AR060:36, AR277:35, AR240:33, AR104:26, AR300:24, AR053:20, AR160:3,
				AKI/U:3, AKI05:2, AK225:2, AKI01:2, AK195:2, AK102:2, AK195:2, AK195:2, AK241:2, AK214:2, AK242:2,
				AR283:2, AR271:2, AR237:2, AR293:1, AR292:1, AR292:1, AR292:1, AR276:1, AR276:1, AR270:1, AR270:1, AR288:1.
	HEGAN94	769649	089	
. 165	HEGBS69	1093342	175	AR104:10, AR055:5, AR060:5, AR282:4, AR300:4, AR277:4, AR218:3, AR089:3, AR299:3, AR219:3,
				AR283:3, AR039:2, AR185:2, AR240:2, AR313:2, AR096:2, AR316:2 L0793:3, L0741:3, L0742:3, L0796:2,
				L0745:2, H0261:1, H0550:1, S0222:1, S0010:1, H0052:1, L0/69:1, L0/94:1 and L0/38:1.
	HEGBS69	1048170	681	
166	HELGK31	681138	176	AR310:67, AR259:63, AR052:53, AR289:52, AR265:49, AR292:39, AR053:38, AR256:37, AR184:36,
				AR286:35, AR298:32, AR294:31, AR312:30, AR263:28, AR273:27, AR309:26, AR258:26, AR283:26,
				AR194:26, AR284:25, AR213:25, AR266:25, AR248:21, AR293:21, AR244:20, AR246:20, AR205:20,
				AR291:18, AR247:18, AR206:18, AR274:17, AR269:17, AR268:14, AR243:14, AR270:14, AR275:13,
				AR186:13, AR218:12, AR253:12, AR313:12, AR177:12, AR219:11, AR249:11, AR202:11, AR183:11,
				AR290:11, AR271:11, AR267:10, AR296:10, AR175:10, AR182:9, AR241:9, AR033:9, AR198:9, AR285:9,
				AR089:8, AR282:8, AR295:8, AR231:7, AR240:7, AR237:7, AR055:7, AR204:6, AR061:6, AR251:6,
				AR299:6, AR238:6, AR096:6, AR316:6, AR192:5, AR185:5, AR232:5, AR234:5, AR104:4, AR226:4,
				AR162:4, AR165:4, AR161:4, AR163:4, AR039:4, AR257:4, AR229:4, AR164:4, AR060:4, AR1/9:4,
				AR264:4, AR166:4, AR300:4, AR272:4, AR217:3, AR308:3, AR261:3, AR2/7:3, AR196:3, AR29/:3,
				AR255:3, AR173:3, AR195:3, AR311:3, AR288:3, AR190:3, AR193:3, AR262:3, AR233:3, AR224:3,
				AR221:3, AR178:3, AR216:3, AR171:2, AR191:2, AR188:2, AR287:2, AR181:2, AR176:2, AR180:2,
				[AR211:2, AR189:2, AR174:2, AR225:2, AR200:2, AR210:2, AR227:2, AR223:2, AR254:2, AR214:1,
				AR260:1, AR235:1, AR199:1, AR215:1, AR203:1, AR281:1, AR168:1, AR230:1, AR170:1 L0771:3,
				L0766:3, L0783:3, L0748:3, L0749:3, L0757:3, L0758:3, H0673:2, L0369:2, L0769:2, S0374:2, L0438:2,
				H0658:2, H0696:2, L0439:2, L0777:2, L0592:2, L0595:2, H0543:2, H0265:1, H0713:1, H0661:1, H0176:1,

				80444:1, L3646:1, 80045:1, H0640:1, H0013:1, S0010:1, H0318:1, H0746:1, H0232:1, H0546:1, H0065:1, H0566:1, H0024:1, H0024:1, H0266:1, H0266:1, H0640:1, H0266:1, H0266:1, H0266:1, H0266:1, H0266:1, H0266:1, H0266:1, H0266:1, H0348:1, L0363:1, H0348:1, L0363:1, H0348:1, H03
				L0767:1, L0768:1, L0651:1, L0776:1, L0807:1, L0636:1, L0809:1, L0545:1, L0647:1, L0793:1, L0664:1, L4560:1, L2260:1, L2671:1, L3827:1, H0648:1, H0436:1, S3014:1, L0742:1, L0750:1, L0779:1, L0752:1, H0445:1, S0434:1, S0436:1, L0596:1 and S0194:1.
	HELGK31	340352	682	
167	HELHD85	847372	117	AR263:4, AR221:2, AR233:2, AR225:2, AR287:2, AR271:2, AR214:2, AR198:2, AR296:2, AR196:1,
				L0749:2, S0242:2, H0716:1, S0116:1, H0662:1, S0360:1, S0045:1, H0392:1, H0455:1, L0021:1, H0599:1,
				T0082:1, H0309:1, H0046:1, H0086:1, H0024:1, H0628:1, H0617:1, H0606:1, H0487:1, H0509:1, L0763:1,
				L0646:1, L0641:1, L0649:1, L0803:1, L0652:1, L0629:1, L0659:1, L0787:1, L0603:1, S0033:1, S0027:1, S0032:1, L0744:1, L0751:1, L0747:1 and L0779:1.
891	HELHI 48	696945	178	AR186:437, AR259:388, AR284:383, AR298:371, AR229:344, AR061:337, AR226:293, AR104:291,
				AR206:282, AR227:247, AR237:242, AR292:218, AR184:204, AR232:190, AR194:189, AR233:186,
				AR185:182, AR231:169, AR294:167, AR267:166, AR175:165, AR182:165, AR286:163, AR243:162,
				AR060:161, AR241:161, AR204:155, AR192:154, AR256:152, AR052:151, AR179:148, AR275:148,
				AR244:148, AR198:142, AR293:139, AR238:138, AR258:136, AR273:136, AR033:135, AR285:133,
				AR248:122, AR289:119, AR249:114, AR234:112, AR299:110, AR300:109, AR295:106, AR274:104,
				AR205:104, AR290:103, AR282:103, AR177:102, AR240:99, AR291:94, AR202:89, AR270:88, AR268:86,
				AR269:85, AR055:84, AR219:82, AR251:82, AR266:81, AR089:79, AR218:76, AR053:75, AR183:73,
				AR213:68, AR310:67, AR296:66, AR316:65, AR271:63, AR312:58, AR246:57, AR309:55, AR247:54,
				AR039:53, AR283:49, AR265:46, AR253:46, AR277:45, AR313:42, AR096:25, AR314:22, AR263:20,
				AR190:11, AR280:11, AR199:11, AR176:11, AR315:11, AR181:11, AR189:11, AR228:11, AR174:11,
				AR163:10, AR162:10, AR196:10, AR161:10, AR272:10, AR236:9, AR180:9, AR235:9, AR191:8, AK211:8,
				AR287:8, AR173:8, AR221:8, AR188:7, AR288:7, AR257:7, AR165:7, AR245:7, AR178:7, AR172:7,
				AR164:7, AR261:7, AR297:7, AR171:7, AR203:7, AR166:6, AR215:6, AR200:6, AR255:6, AR281:6,
				AR230:6, AR207:6, AR168:6, AR210:6, AR224:6, AR264:5, AR262:5, AR311:5, AR260:5, AR214:5,
				AR223:5, AR169:5, AR225:5, AR308:5, AR217:4, AR216:4, AR222:4, AR195:4, AR212:4, AR201:4,
				AR170:4, AR193:4, AR197:4, AR239:1, AR252:1, AR242:1 L0777:11, L0770:9, L0596:9, S0045:8, S0046:8,
				L0764:8, H0046:7, L0748:7, L0751:7, H0556:6, H0032:6, L3905:6, L0438:6, L0439:6, S0222:5, L0771:5,
				L0803:5, L3827:5, L0747:5, L0595:5, T0049:4, H0412:4, L0666:4, L0663:4, S0436:4, H0265:3, S0356:3,
				H0013:3, H0620:3, H0051:3, H0622:3, H0135:3, L0769:3, L0774:3, L0659:3, H0144:3, S0027:3, L0754:3,
				L0779:3, L0591:3, H0624:2, S0376:2, L3388:2, H0370:2, H0438:2, H0333:2, L3817:2, H0599:2, S0010:2,

				H0251:2, H0327:2, H0024:2, H0266:2, S0038:2, L0662:2, L0363:2, L0794:2, L0775:2, L0805:2, L0809:2, L0519:2, L0709:2, L2259:2, S0328:2, L3832:2, S0037:2, S3014:2, L0740:2, L0756:2, L0587:2, L0588:2,
-				L0361:2, H0542:2, S0040:1, H0713:1, H0717:1, S0444:1, T0008:1, H0580:1, S0132:1, H0393:1, L3316:1, H0411:1, S0278:1, H0441:1, H0455:1, H0632:1, L3655:1, H0069:1, L0021:1, H0036:1, H0590:1, S0049:1, L3655:1, H0645:1, H06
				H0052:1, H0009:1, H0570:1, H0081:1, L0471:1, H0023:1, H0014:1, H0015:1, H0373:1, S003:1, H0188:1, H0284:1, S0250:1, S0003:1, H0615:1, H0039:1, T0006:1, H0644:1, L0455:1, S0036:1, H0163:1, H0639:1,
				H0616:1, H0063:1, T0067:1, H0433:1, H0268:1, H0269:1, H0413:1, L0564:1, H0509:1, S0150:1, L0631:1,
				L3904:1, L0646:1, L0800:1, L0765:1, L0653:1, L0776:1, L0606:1, L0807:1, L0658:1, L0789:1, L0664:1,
				H0555:1, H0436:1, H0631:1, L0743:1, L0744:1, L0749:1, L0755:1, L0757:1, S0434:1, L0599:1 and L0608:1.
	HELHL48	610025	683	
169	HEMAM41	741647	179	AR216:14, AR217:11, AR214:10, AR104:9, AR215:9, AR224:8, AR161:8, AR162:8, AR163:7, AR285:7,
				AR221:7, AR222:7, AR291:7, AR296:7, AR284:6, AR172:6, AR294:6, AR235:6, AR298:6, AR223:6,
				AR286:6, AR165:6, AR236:6, AR060:6, AR282:6, AR190:6, AR033:6, AR168:6, AR164:6, AR186:6,
				AR225:6, AR287:6, AR166:6, AR171:5, AR292:5, AR193:5, AR295:5, AR297:5, AR255:5, AR291:5,
				AR240:5, AR196:5, AR261:5, AR257:5, AR089:5, AR269:5, AR293:5, AR184:5, AR191:5, AR266:5,
				AR182:5, AR283:5, AR247:5, AR178:5, AR188:5, AR262:5, AR181:4, AR185:4, AR183:4, AR055:4,
				AR288:4, AR289:4, AR169:4, AR189:4, AR270:4, AR197:4, AR175:4, AR290:4, AR173:4, AR218:4,
				AR258:4, AR219:4, AR248:4, AR176:4, AR250:4, AR096:4, AR260:4, AR316:4, AR259:4, AR174:4,
				AR061:4, AR249:4, AR238:4, AR311:3, AR242:3, AR256:3, AR254:3, AR200:3, AR231:3, AR228:3,
				AR210:3, AR268:3, AR201:3, AR300:3, AR299:3, AR239:3, AR199:3, AR226:3, AR177:3, AR180:3,
				AR267:3, AR265:3, AR274:3, AR179:3, AR203:3, AR052:3, AR233:3, AR310:3, AR230:3, AR309:3,
				AR312:3, AR277:2, AR243:2, AR237:2, AR205:2, AR234:2, AR039:2, AR232:2, AR314:2, AR211:2,
				AR053:1, AR280:1, AR192:1, AR253:1, AR212:1 S0330:3, S0046:2, H0494:2, L0065:2, L0666:2, H0670:2,
				L0439:2, H0624:1, H0686:1, H0295:1, S0212:1, S0442:1, H0735:1, L3388:1, H0549:1, H0392:1, H0559:1,
				[H0052:1, H0597:1, H0327:1, H0009:1, H0024:1, S0050:1, S0051:1, H0428:1, S0150:1, H0641:1, L0637:1,
				L0662:1, L0794:1, L0649:1, L0803:1, L0774:1, L0775:1, L0651:1, L0659:1, L0526:1, L5622:1, L0663:1,
				L0665:1, H0593:1, H0690:1, S0328:1, H0696:1, H0555:1, H0478:1, S0037:1, S0028:1, L0756:1, L0759:1,
				S0434:1 and S0276:1.
	HEMAM41	419870	684	
170	HEPAA46	596830	180	AR215:19, AR245:4, AR221:4, AR224:3, AR282:3, AR053:3, AR252:3, AR309:3, AR176:2, AR162:2,
				AR169:2, AR266:2, AR166:2, AR263:2, AR214:2, AR161:2, AR163:2, AR172:2, AR183:2, AR165:2,
				AR177:2, AR164:2, AR182:2, AR313:2, AR264:2, AR283:2, AR193:2, AR236:1, AR175:1, AR217:1,

				AD722:1 AD786.1 AD171:1 AD767.1 AD772.1 AD777.1 AD766.1 AD706.1 AD706.1
				AR295:1. AR207:1. AR204:1 AR267:1 AR181:1 AR033:1 AR180:1 AR234:1 AR179:1 AR206:1
				AR271:1, AR188:1, AR230:1, AR262:1, AR178:1, AR287:1, AR229:1, AR201:1, AR270:1, AR291:1,
				AR185:1, AR247:1, AR205:1, AR170:1, AR294:1, AR290:1, AR212:1, AR237:1 H0549:3, H0150:2, L0779:2 and L0758:1.
171	HEQAK71	598018	181	AR245:13, AR195:11, AR207:10, AR175:10, AR192:9, AR246:9, AR182:9, AR174:9, AR270:9, AR243:9,
				AR205:8, AR269:8, AR235:8, AR309:8, AR272:8, AR311:8, AR165:7, AR193:7, AR166:7, AR189:7,
				AR263:7, AR164:7, AR096:7, AR221:7, AR089:7, AR191:7, AR264:7, AR290:7, AR282:7, AR161:7,
				AR190:7, AR162:7, AR224:7, AR176:7, AR163:7, AR271:7, AR242:6, AR180:6, AR197:6, AR170:6,
				AR183:6, AR198:6, AR215:6, AR268:6, AR214:6, AR196:6, AR308:6, AR201:6, AR177:6, AR223:6,
				AR200:6, AR173:6, AR188:6, AR217:6, AR312:6, AR039:5, AR225:5, AR275:5, AR169:5, AR060:5,
				AR168:5, AR222:5, AR213:5, AR053:5, AR267:5, AR316:5, AR295:5, AR274:5, AR181:5, AR240:5,
				AR212:5, AR288:5, AR261:5, AR104:5, AR313:4, AR185:4, AR216:4, AR204:4, AR285:4, AR199:4,
				AR252:4, AR238:4, AR247:4, AR299:4, AR297:4, AR291:4, AR171:4, AR277:4, AR203:4, AR210:4,
		_		AR289:4, AR262:4, AR286:3, AR178:3, AR300:3, AR033:3, AR296:3, AR236:3, AR258:3, AR239:3,
				AR266:3, AR218:3, AR232:3, AR172:3, AR257:3, AR234:3, AR287:3, AR294:3, AR255:3, AR293:3,
				AR226:3, AR233:2, AR237:2, AR231:2, AR179:2, AR254:2, AR229:2, AR055:2, AR260:2, AR061:2,
				AR211:2, AR227:2, AR230:2, AR283:2, AR228:2, AR219:2, AR256:2 L0803:3, L0809:3, L0755:3, L0637:2,
				H0539:2, L0754:2, S0420:1, H0486:1, S0010:1, H0544:1, S0440:1, H0646:1, L0372:1, L0764:1, L0773:1,
				L0794:1, L0655:1, L0789:1, H0144:1, H0696:1, H0555:1, L0748:1, L0747:1, L0779:1, L0731:1, L0758:1,
				S0436:1, L0599:1, L0604:1 and S0242:1.
172	HEQCC55	1352368	182	AR216:11, AR217:10, AR214:9, AR207:9, AR263:8, AR195:8, AR165:8, AR253:8, AR224:8, AR242:8,
				AR053:8, AR164:8, AR163:8, AR246:8, AR161:8, AR222:8, AR245:8, AR166:8, AR170:8, AR162:8,
				AR308:7, AR197:7, AR212:7, AR309:7, AR223:7, AR312:7, AR198:7, AR311:6, AR250:6, AR254:6,
				AR205:6, AR243:6, AR213:6, AR274:6, AR168:6, AR264:6, AR193:5, AR296:5, AR201:5, AR272:5,
				AR238:5, AR033:5, AR275:5, AR175:5, AR282:4, AR313:4, AR221:4, AR291:4, AR283:4, AR225:4,
				AR174:4, AR235:4, AR104:4, AR261:4, AR171:4, AR277:4, AR297:4, AR288:4, AR177:4, AR300:4,
				AR183:4, AR295:4, AR169:4, AR316:4, AR192:4, AR270:4, AR181:4, AR089:4, AR266:4, AR289:3,
				AR269:3, AR178:3, AR226:3, AR173:3, AR172:3, AR239:3, AR268:3, AR299:3, AR290:3, AR293:3,
				AR189:3, AR196:3, AR185:3, AR231:3, AR257:3, AR240:3, AR285:3, AR247:3, AR176:3, AR039:3,
				AR210:3, AR271:3, AR255:3, AR191:3, AR267:3, AR204:3, AR182:3, AR096:3, AR262:3, AR200:3,
				AR179:3, AR237:3, AR227:3, AR199:3, AR286:3, AR060:3, AR234:3, AR233:3, AR232:3, AR061:2,
				AR190:2, AR294:2, AR287:2, AR258:2, AR188:2, AR229:2, AR055:2, AR230:2, AR215:2, AR228:2,
				AR203:2, AR236:2, AR211:2, AR219:2, AR218:1, AR256:1 L0803:5, L0755:5, L0666:4, S0418:3, H0059:3,

		-		H0494:3, S0420:2, H0086:2, H0551:2, H0413:2, L0763:2, L3904:2, L0646:2, L0800:2, L0775:2, L0659:2, L0809:2, H0144:2, H0435:2, H0670:2, L0731:2, S0342:1, H0294:1, S0180:1, H0734:1, S0046:1, S0278:1, H0437:1, H0392:1, H0544:1, H0545:1, L0471:1, H0012:1, H0275:1, H0286:1, S0250:1, H0039:1, H0553:1, H0553:1, H0563:1, H0553:1, H0563:1, H05
				L0806:1, L0653:1, L0657:1, L0512:1, L0789:1, L0663:1, S0406:1, L0743:1, L0754:1, L0750:1, L0780:1, L0780:1, L0581:1, L0603:1, L06
	HEQCC55	884824	685	
	HEQCCSS	748227	989	
173	HERAD40	560633	183	AR171:91, AR223:83, AR225:69, AR172:61, AR170:58, AR214:58, AR168:56, AR169:54, AR263:47,
				AR217:46, AR224:39, AR264:37, AR222:37, AR216:37, AR215:36, AR196:36, AR309:36, AR313:35,
				AR221:32, AR312:31, AR213:31, AR235:30, AR311:29, AR212:29, AR207:29, AR201:27, AR195:27,
				AR245:27, AR053:26, AR261:26, AR308:26, AR096:25, AR299:25, AR236:25, AR089:25, AR252:25,
				AR161:25, AR162:24, AR165:24, AR191:24, AR296:24, AR198:23, AR163:23, AR164:23, AR242:23,
				AR316:23, AR246:23, AR166:22, AR197:21, AR193:21, AR240:21, AR185:21, AR199:20, AR192:20,
				AR275:19, AR177:19, AR218:19, AR271:19, AR274:19, AR262:19, AR181:19, AR060:19, AR295:19,
				AR173:19, AR297:19, AR188:18, AR269:18, AR033:18, AR189:18, AR277:18, AR219:18, AR229:18,
				AR175:18, AR039:18, AR174:17, AR200:17, AR285:17, AR287:17, AR258:17, AR291:17, AR288:16,
				AR253:16, AR205:16, AR204:16, AR104:16, AR282:16, AR247:16, AR300:16, AR270:16, AR190:16,
				AR179:16, AR286:15, AR210:15, AR250:15, AR257:15, AR183:15, AR180:14, AR178:14, AR293:14,
	_			AR260:14, AR211:13, AR238:13, AR226:13, AR254:13, AR272:13, AR203:13, AR231:12, AR268:12,
				AR294:12, AR267:12, AR182:11, AR176:11, AR055:11, AR234:11, AR233:10, AR237:10, AR255:10,
				AR290.10, AR283:10, AR243:10, AR239:10, AR256:10, AR289:9, AR232:9, AR230:9, AR227:8, AR266:8,
				AR228:8, AR061:6 H0345:1
174	HERAR44	566811	184	AR060.18, AR055:17, AR299:10, AR089:10, AR283:10, AR185:9, AR104:8, AR039:8, AR096:7, AR282:6,
				AR316:6, AR277:6, AR176:5, AR300:5, AR204:5, AR162:5, AR161:5, AR163:5, AR181:4, AR233:4,
				AR201:4, AR313:4, AR228:4, AR274:4, AR269:4, AR236:4, AR240:4, AR177:4, AR245:4, AR205:4,
				AR218:4, AR257:4, AR235:4, AR178:4, AR252:3, AR168:3, AR165:3, AR231:3, AR183:3, AR182:3,
				AR166:3, AR172:3, AR164:3, AR197:3, AR266:3, AR272:3, AR179:3, AR289:3, AR207:3, AR237:3,
				AR291:3, AR196:3, AR293:3, AR229:3, AR261:3, AR264:3, AR198:3, AR267:3, AR268:3, AR230:3,
				AR255:3, AR247:3, AR175:3, AR309:3, AR234:3, AR238:3, AR061:3, AR287:3, AR174:3, AR270:3,
				AR191:3, AR226:3, AR239:3, AR193:3, AR216:3, AR219:3, AR170:3, AR286:2, AR288:2, AR263:2,
				AR294:2, AR180:2, AR297:2, AR223:2, AR199:2, AR312:2, AR285:2, AR271:2, AR203:2, AR295:2,
				AR262:2, AR225:2, AR227:2, AR232:2, AR188:2, AR243:2, AR033:2, AR200:2, AR275:2, AR290:2,
				AR224:2, AR217:2, AR195:2, AR213:2, AR189:2, AR190:2, AR173:2, AR311:2, AR171:1, AR258:1,

				AR296:1 H0059:1 and H0345:1.
175	HESAJ10	526013		AR240:38, AR104:31, AR219:27, AR282:26, AR300:23, AR039:23, AR299:22, AR089:21, AK218:19, AR096:19, AR277:19, AR055:14, AR313:13, AR185:13, AR060:13, AR316:11, AR283:7 H0617:16, H0545:12, L0757:8, S0358:7, S0360:7, L0747:7, H0156:5, H0546:5, S0126:5, L0731:5, H0424:4, H0181:4, H0545:12, L0757:8, S0358:7, S0360:7, L0747:7, H0156:5, H0546:5, S0126:5, L0731:5, H0424:4, H0181:4, H0058:2, H0024:3, H0024:3, H0606:2, S0440:2, L0769:2, L0773:2, S0320:2, S0406:2, S0301:2, S0222:2, H0497:2, L0751:2, L0754:2, L0752:2, H0666:2, S0440:2, L0773:2, S0134:2, S0330:2, S0406:2, S0406:1, H0661:1, H0663:1, L0751:2, L0754:2, L0752:2, L0588:2, H0653:2, S0194:2, S0132:1, H0549:1, H0431:1, H0370:1, H0586:1, H0058:1, H0059:1, H0059:1, H0059:1, H0059:1, H0059:1, H0059:1, H0659:1, H0659:1, H0659:1, H0659:1, H0659:1, L0764:1, H0659:1, L0763:1, L0763:1, L0763:1, L0763:1, L0763:1, L0763:1, L0763:1, L0763:1, L0763:1, L0779:1, S0434:1, S0436:1, L0775:1, L0384:1, H0659:1, H06
176	HETAB45	609827	981	AR273:297, AR251:284, AR025:180, AR310:197, AR313:87, AR313:87, AR243:85, AR273:297, AR251:284, AR039:194, AR247:91, AR312:89, AR292:88, AR313:87, AR249:86, AR243:37, AR218:109, AR315:101, AR219:94, AR247:91, AR312:89, AR292:88, AR313:87, AR249:86, AR243:72, AR271:85, AR175:83, AR283:67, AR283:60, AR284:36, AR283:51, AR295:52, AR283:64, AR283:64, AR283:64, AR283:64, AR283:64, AR283:64, AR283:46, AR283:46, AR283:48, AR295:32, AR183:40, AR284:48, AR286:38, AR300:47, AR290:37, AR292:37, AR206:35, AR285:34, AR295:32, AR194:32, AR197:32, AR197:32, AR197:32, AR197:32, AR286:38, AR289:29, AR208:29, AR296:25, AR286:38, AR286:38, AR289:29, AR297:20, AR297:19, AR298:34, AR289:34, AR289:31, AR192:22, AR289:29, AR297:20, AR297:10, AR297:19, AR297:19, AR297:13, AR294:31, AR296:1, H0041:1, R0041:1, H0040:1, H0040:1, H0063:1, H0052:1, H0040:1, H0040:1, H0063:1, H0059:1, L0744:1, L0744:1, L0744:1, L0749:1, L0777:1, H0040:1, L0377:1, H0040:1, L0777:1, H0040:1, L077

177	HETBR16	703243	187	AR162:11, AR176:10, AR178:10, AR163:10, AR161:10, AR165:10, AR229:10, AR164:10, AR166:10,
				AR173:9, AR313:9, AR257:9, AR268:9, AR293:8, AR269:8, AR173:9, AR101:0, AR303:0, AR137:0, AR180:8, AR180:3, AR180:7, AR180:7, AR180:7, AR180:7, AR180:7, AR180:7, AR180:7, AR180:7, AR180:8, AR180:7, AR1
				AR228:7, AR239:7, AR183:7, AR174:7, AR175:7, AR177:7, AR300:7, AR226:7, AR191:6, AR261:6,
				AR296:6, AR192:6, AR267:6, AR258:6, AR270:6, AR204:6, AR190:6, AR237:6, AR262:9, AR203:6,
				AK236:5, AK263:5, AK286:5, AK039:5, AK269:5, AK053:5, AK157:5, AK216:5, AK212:5, AK276:5, AK236:5, AK221:4, Apped:s. apped:s. akped:s. AR286:5, AR2
				AR272:4, AR234:4, AR061:4, AR201:4, AR295:4, AR235:4, AR316:4, AR096:4, AR193:4, AR260:4,
				AR188:4, AR291:4, AR271:4, AR254:4, AR055:4, AR290:4, AR275:4, AR230:4, AR274:4, AR250:4,
				AR213:4, AR195:4, AR308:4, AR256:3, AR212:3, AR245:3, AR253:3, AR232:3, AR060:3, AR242:3,
				AR282:3, AR198:3, AR200:3, AR033:3, AR217:3, AR311:3, AR214:3, AR205:3, AR216:3, AR218:3,
				JAR277:3, AR224:2, AR207:2, AR246:2, AR243:2, AR104:2, AR210:2, AR168:2, AR219:2, AR283:2,
				AR252:1, AR211:1 S0408:1, H0597:1, H0046:1, H0110:1, S0422:1, L0598:1, H0436:1, H0445:1 and
				L0608:1.
178	HETEU28	1018676	188	AR104:21, AR089:15, AR055:12, AR219:12, AR218:12, AR283:10, AR282:9, AR039:9, AR096:8, AR060:7,
				AR316:7, AR299:6, AR313:5, AR240:5, AR300:4, AR185:4, AR2 <i>77:4</i> , AR309:3, AR170:3, AR2553:3,
				AR266:3, AR169:3, AR235:3, AR196:3, AR175:3, AR264:2, AR182:2, AR223:2, AR214:2, AR163:2,
				AR165:2, AR200:2, AR172:2, AR053:2, AR164:2, AR166:2, AR274:2, AR173:2, AR269:2, AR215:2,
				AR257:2, AR270:2, AR262:2, AR191:2, AR258:2, AR176:2, AR246:2, AR174:2, AR213:2, AR290:2,
				AR210:2, AR297:1, AR293:1, AR225:1, AR162:1, AR238:1, AR285:1, AR268:1, AR178:1, AR168:1,
				AR287:1, AR255:1, AR161:1, AR229:1, AR233:1, AR205:1, AR189:1, AR199:1, AR179:1, AR295:1,
				AR222:1, AR247:1, AR294:1, AR236:1, AR171:1, AR203:1 S0027:6, L0776:5, L0659:3, S0406:3, L0747:3,
				S0420.2, H0046.2, H0622.2, S0210.2, L0662.2, L0666.2, S3014.2, S0028.2, L0748.2, L0587.2, S0442.1,
				S0358:1, H0329:1, T0109:1, H0013:1, H0178:1, H0024:1, T0023:1, S0368:1, H0040:1, H0560:1, L0598:1,
				L0770:1, L0761:1, L0646:1, L0765:1, L0794:1, L0806:1, L0654:1, L0807:1, L0517:1, L0526:1, L0783:1,
				L0791:1, H0693:1, S0126:1, S0044:1, S0404:1, L0741:1, L0439:1, L0757:1 and L0758:1.
	HETEU28	882328	687	
179	HETLM70	1177512	189	AR089:27, AR283:26, AR277:21, AR060:19, AR316:19, AR282:18, AR104:15, AR299:15, AR194:14,
				AR281:14, AR055:14, AR219:14, AR226:13, AR039:13, AR096:13, AR313:12, AR315:12, AR240:12,
				AR232:12, AR218:12, AR202:12, AR238:11, AR280:11, AR300:11, AR185:11, AR237:11, AR227:11,
				AR246:10, AR206:9, AR247:9, AR310:9, AR265:9, AR295:9, AR251:9, AR309:9, AR033:8, AR314:8,
				AR205:8, AR053:8, AR052:7, AR213:7, AR266:7, AR244:7, AR061:7, AR198:7, AR286:7, AR192:6,
				AR289:6, AR292:6, AR285:6, AR177:6, AR284:6, AR263:6, AR183:6, AR293:6, AR312:6, AR204:5,
				AR270:5, AR243:5, AR231:5, AR294:5, AR298:5, AR168:5, AR182:5, AR233:5, AR234:5, AR291:5,

	_	_	<u> </u>	
AR229:5, AR267:4, AR269:4, AR290:4, AR296:4, AR175:4, AR241:4, AR259:4, AR256:3, AR274:3, AR253:3, AR249:3, AR186:3, AR179:3, AR258:3, AR184:2, AR273:2, AR275:1, AR271:1 L0803:3, H0356:2, L0800:2, L0517:2, L0793:2, L0666:2, S0406:2, L0751:2, L0779:2, S0434:2, L0601:2, H0661:1, S0442:1, S0358:1, S0444:1, H0046:1, H0150:1, H06188:1, H0617:1, H0383:1, H0673:1, H0674:1, H0663:1, L0662:1, L0774:1, L0775:1, L0805:1, L0809:1, L0809:1, L0544:1, L5622:1, L0665:1, H0689:1, H0683:1, H0658:1, H0648:1, S0328:1, S0330:1, S0380:1, H0696:1, S0146:1, L0754:1 and L0752:1.		7.1024 A D.282. C.	AR292:14, AR186:12, AR241:10, AR194:9, AR275:6, AR184:6, AR202:6, AR244:6, AR228:7, AR298:7, AR298:7, AR294:7, AR274:7, AR295:6, AR184:6, AR295:6, AR288:4, AR298:7, AR298:7, AR298:4, AR298:4, AR298:4, AR298:4, AR298:4, AR298:3, AR288:3, AR298:3,	AR173:16, AR162:14, AR161:14, AR163:13, AR180:12, AR178:11, AR257:11, AR262:11, AR191:11, AR196:10, AR196:10, AR226:10, AR174:10, AR297:10, AR255:9, AR165:9, AR238:9, AR313:9, AR287:8, AR164:8, AR199:8, AR258:8, AR166:8, AR179:8, AR261:8, AR264:8, AR288:7, AR260:7, AR225:7, AR182:7, AR242:7, AR230:7, AR280:7, AR299:7, AR290:7, AR290:7, AR291:6, AR175:6, AR277:7, AR201:7, AR291:6, AR175:6,
	889	689	190	191
	1046327	1046328	847073	566712
	HETLM70			нгавноз
			180	181

		$\overline{}$
AR230:4, AR232:4, AR277:3, AR2223:3, AR227:3, AR168:3, AR061:3, AR055:3, AR283:3, AR204:2, AR169:2, AR170:1, AR242:1 L0766:18, L0754:12, H0441:11, L0748:10, L0439:10, S0358:8, H0521:8, L0759:7, L0747:6, L0769:5, L0662:5, L0765:5, L0659:5, L0665:5, S0136:5, L0751:5, L0752:5, L0599:5, S0360:4, L0770:4, H0556:3, L3653:3, H0318:3, H0673:3, L3905:3, L0761:3, L0774:3, L0438:3, L0740:3, L0770:4, H0556:3, L3653:3, H0318:3, H0581:3, H0673:3, L3905:3, L0761:3, L0774:3, L0438:3, L0740:3, L0770:4, H0556:3, L3653:3, H0363:2, H0567:2, H0361:2, L0747:2, L0766:2, L0805:2, L0776:2, L0805:2, L0747:2, L0740:2, L0747:2, L0740:2, L0740:2, L0740:2, L0740:2, L0740:2, L0740:2, L0740:2, L0740:2, H0031:2, H0031:2, H0133:2, H0551:2, H0564:1, H0664:1, H0662:1, S0045:1, H0773:1, S0210:2, S0210:2, S0210:2, S0210:2, S0210:2, L0740:1, H0485:1, H0485:1, H0484:1, H0664:1, H0664:1, H0662:1, H0664:1, H0670:1, L0670:1, H0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0775:1, L0775:1, L0670:1, L0670:1, L0670:1, L0670:1, L0770:1, L0770:1, H0670:1, L0670:1, L0670:1, L0770:1, L0770:1, H0670:1, L0670:1, L0670:1, L0770:1, L0770:1, H0670:1, L0770:1, L0770:1		AR258:1 H0172:2 AR272:6, AR223:6, AR205:6, AR308:6, AR225:5, AR053:5, AR224:5, AR252:5, AR296:5, AR245:4,
		198
	561560	560639
	HFCEW05	HFFAL36
	186	188

				AR274:2, AR225:2, AR293:2, AR285:2, AR287:2, AR175:2, AR229:2, AR055:2, AR226:2, AR189:2, AR174:2, AR177:2, AR262:2, AR179:2, AR277:2, AR269:2, AR174:2, AR271:2, AR233:2, AR171:2, AR201:2, AR271:2, AR233:2, AR171:2, AR201:2, AR271:2, AR233:2, AR201:2, AR201:1, AR203:1, H0042:3, H0087:3, L0773:2, S00126:5, L0731:5, H0044:4, H0181:4, L0089:4, H0024:3, H0087:3, L0783:3, H0672:3, S0012:3, S0012:2, S0040:2, S0020:2, H0047:2, H0049:2, L0773:2, L0773:2, L0049:2, L0773:2, L0049:2, L0773:2, L0049:2, L0773:2, L0049:1, H0049:1, L0776:1, L0776:1, L0304:1, L0776:1, L0776:1, L0776:1, L0304:1, H0040:1, H0
	HFIIZ70	802906	692	
192	HFKET18	\$180815	202	AR313:6, AR180:6, AR161:5, AR242:5, AR162:5, AR163:5, AR176:5, AR178:4, AR309:4, AR180:9, AR180:6, AR180:6, AR180:6, AR180:6, AR222:4, AR162:5, AR163:5, AR223:3, AR222:4, AR164:4, AR166:4, AR229:4, AR183:4, AR300:4, AR270:4, AR270:4, AR293:3, AR280:3, AR264:3, AR280:3, AR280:2, AR280:2, AR280:2, AR280:2, AR280:3, AR280:3, AR280:2, AR2
193	HFLNB64	580829	203	AR165:7, AR164:7, AR166:7, AR215:7, AR264:6, AR170:6, AR263:6, AR309:6, AR172:5, AR308:5, AR161:5, AR162:5, AR312:5, AR163:5, AR266:5, AR196:5, AR225:5, AR053:5, AR313:4, AR096:4,

				AR269:4, AR175:4, AR181:4, AR200:4, AR173:4, AR252:4, AR188:4, AR272:4, AR174:4, AR219:4,
				AR2/5:4, AR1/9:4, AR165:4, AR282:4, AR290:4, AR254::, AR089:3, AR288:3, AR199:3, AR288:3, AR199:3, AR218:3, AR218:3, AR208:3, AR288:3, AR2
				AR290:3, AR231:3, AR255:3, AR262:3, AR287:3, AR253:3, AR285:3, AR311:3, AR316:3, AR233:3,
				AR237:3, AR177:3, AR270:3, AR291:3, AR189:3, AR170:3, AR229:3, AR229:3, AR256:3, AR239:3, AR239:3, AR239:3, AR239:3, AR296:3, AR2
				AR274:2, AR234:2, AR289:2, AR223:2, AR203:2, AR238:2, AR300:2, AR297:2, AR060:2, AR104:2,
				AR061:2, AR207:2, AR230:2, AR214:2, AR211:2, AR211:2, AR171:2, AR250:2, AK220:2, AK185:2,
				AR224:2, AR178:2, AR217:2, AR232:2, AR055:2, AR222:2, AR108:2, AR200:2, AR217:2, AR033:-2, AR224:2, AR217:2, AR217:2, AR033:-2, AR224:2, AR24:2, AR224:2, AR224:2, AR224:2, AR224:2, AR24:2, AR24:2
				AR283:1, AR227:1, AR193:1, AR193:1, AR203:1
		•		H02511, H000911, S002311, S000311, H067411, H059811, H009011, H026411, H056111, L059811, L077011,
,				L0794:1, L0803:1, L0774:1, L0542:1, L0809:1, L0789:1, L0792:1, H0547:1, H0696:1, H0576:1, S0206:1,
				1.0777:1, 1.0780:1, 1.0758:1, 1.0759:1, 50450:1, HOLDO:1,
194	HFOXA73	850699	204	AR264:3, AR197:3, AR274:3, AR168:2, AR291:2, AR205:2, AR283:2, AR105:2, AR105:1, AR1
				AR161:1, AR230:1, AR240:1, AR266:1, AR190:1, AR263:1, AR191:1, AR2//:1, AR1/6:1, AR240:1, AR240:1, AR266:1, AR366:1, AR3
				AK22 (:1, AK102:1, AK270:1, 30270:1
	HFOXA73	532079	693	100 ADDICA ADDIC
195	HFOXB13	570699	205	AR274:4, AR253:3, AR165:3, AR192:3, AR164:3, AR183:3, AR1806:3, AR204:3, AR
				AR199:3, AR169:3, AR242:3, AR311:2, AR266:2, AR053:2, AR185:2, AR269:2, AR265:2, AR069:2,
				AR228:2, AR222:2, AR239:2, AR191:2, AR382:2, AR308:2, AR1/6:2, AR293:2, AR2/1:2,
				AR229:2, AR162:2, AR181:2, AR255:2, AR212:1, AR272:1, AR272:1, AR238:1, AR296:1,
				AR313:1, AR224:1, AR060:1, AR213:1, AR261:1, AR179:1, AR290:1, AR300:1, AR170:1, AR033:1,
				AR275:1, AR226:1, AR312:1, AR316:1, AR168:1, AR236:1, AR196:1, AR267:1, AR204:1, AK197:1,
				AR193:1, AR190:1, AR234:1, AR294:1, AR268:1, AR217:1, AR237:1 H0124:1 and S0276:1.
196	HFPAC12	589522	206	AR274.3, AR225.2, AR178.2, AR217.2, AR205.2, AR213.2, AR182.2, AR311:1, AR289:1, AR197:1
				L0439:6, S0222:4, H0438:2, S0049:2, L0777:2, L0731:2, L0757:2, S0140:1, S0010:1, H0539:1, S0540:1,
				S6028:1, S0214:1, S0036:1, H0040:1, S0144:1, S0344:1, L0769:1, L0800:1, L0794:1, L0438:1, S0044:1,
				L0742:1, L0747:1 and L0759:1.
197	HFPA071	629193	207	AR061:490, AR273:461, AR232:455, AR237:432, AR238:424, AR227:414, AR226:343, AR241:311,
				AR186:304, AR274:285, AR244:270, AR206:269, AR194:200, AR192:197, AR271:101, AR27:1103, AR190:1103,
				AR052:167, AR198:167, AR231:163, AR202:162, ARZ15:137, AR204:132, AR31:131, ARZ26:132,
·				AR205:148, AR259:147, AR229:136, AR312:132, AR219:132, AR183:132, AR233:128, AR246:123,
				AR249:122, AR039:122, AR251:122, AR033:114, ARX13:115, AR033:112, AR033:112, AR033:112, AR033:112, AR033:113,

				AR293:105, AR265:104, AR246:99, AR234:98, AR096:96, AR218:96, AR280:93, AR309:93, AR300:92,
				AR055:91, AR282:90, AR294:90, AR184:90, AR313:89, AR104:89, AR175:88, AR299:80, AR281:84, AR315:83 AR179:80 AR263:79 AR060:78, AR253:77, AR256:74, AR267:72, AR247:71, AR316:66,
				AR295:66, AR298:65, AR284:64, AR183:63, AR089:63, AR240:60, AR283:57, AR277:51, AR290:49,
				AR258:42, AR285:41, AR269:41, AR268:39, AR286:38, AR296:36, AR289:35, AR182:34, AR270:32,
				AR266:31, AR291:24, AR176:11, AR161:9, AR162:9, AR163:9, AR264:9, AR215:9, AR197:8, AR225:8,
				AR201:8, AR193:8, AR181:7, AR235:7, AR236:7, AR252:7, AR165:7, AR178:7, AR245:7, AR228:7,
				AR180:7, AR254:7, AR261:7, AR164:7, AR207:6, AR223:6, AR166:6, AR239:6, AR214:6, AR216:6,
				AR250:6, AR224:6, AR168:6, AR195:6, AR217:6, AR287:6, AR288:6, AR221:5, AR242:5, AR173:5,
				AR257:5, AR222:5, AR196:5, AR297:5, AR174:5, AR169:5, AR272:5, AR308:5, AR200:5, AR170:5,
				AR171:5, AR212:4, AR262:4, AR191:4, AR255:4, AR210:4, AR189:4, AR311:4, AR230:4, AR172:4,
			_	AR188;4, AR203;4, AR199;3, AR190;3, AR211;3, AR260;2 L0748;9, L0749;5, S0360;4, L0803;4, L0779;4,
				L0777;4, H0529;3, L0747;3, L0758;3, H0657;2, S0354;2, H0637;2, S6016;2, H0486;2, H0615;2, H0553;2,
			_	S0422.2, L0646.2, L0766.2, L0519.2, L0666.2, L0665.2, H0436.2, L0754.2, L0750.2, H0716.1, H0580.1,
			_	S0007.1, H0415:1, H0013:1, H0069:1, H0427:1, S0280:1, H0156:1, H0118:1, S0346:1, H0581:1, T0103:1,
				H0050:1, L0471:1, H0014:1, S0214:1, H0328:1, H0628:1, H0135:1, H0551:1, S0440:1, L0662:1, L0794:1,
				10650:1, L0775:1, L0805:1, L0776:1, L0655:1, L0606:1, L0783:1, L0809:1, L0792:1, S0374:1, H0693:1,
				H0547:1, H0658:1, L0745:1, L0746:1, L0780:1, L0752:1, L0731:1, L0757:1, L0485:1 and H0422:1.
861	HFPCX09	1309793	208	AR252:67, AR253:31, AR251:7, AR104:5, AR180:5, AR273:5, AR161:4, AR265:4, AR243:4, AR249:3,
:				AR309:3, AR052:3, AR282:3, AR313:3, AR060:3, AR172:3, AR184:3, AR245:3, AR193:3, AR089:3,
				AR283:3, AR163:3, AR165:3, AR033:3, AR207:3, AR202:3, AR299:3, AR213:3, AR312:3, AR162:3,
				AR164:2, AR310:2, AR200:2, AR266:2, AR274:2, AR228:2, AR296:2, AR179:2, AR096:2, AR055:2,
				AR316:2, AR175:2, AR239:2, AR166:2, AR216:2, AR170:2, AR201:2, AR311:2, AR183:2, AR246:2,
				AR171:2, AR235:2, AR230:2, AR298:2, AR215:2, AR292:2, AR300:2, AR214:2, AR053:2, AR185:2,
				AR229:2, AR219:2, AR308:2, AR186:2, AR272:2, AR264:2, AR293:2, AR294:2, AR176:2, AR289:2,
				AR240:2, AR192:2, AR257:2, AR247:2, AR291:2, AR212:2, AR225:2, AR237:2, AR295:2, AR290:2,
				AR286:2, AR268:2, AR277:2, AR231:2, AR210:2, AR285:1, AR263:1, AR267:1, AR24:1, AR261:1,
				AR205:1, AR288:1, AR284:1, AR188:1, AR315:1, AR258:1, AR196:1, AR217:1, AR262:1, AR269:1,
				AR182:1, AR174:1, AR223:1, AR190:1, AR039:1, AR218:1, AR255:1, AR241:1, AR197:1, AR198:1,
				AR271:1, AR281:1, AR061:1, AR168:1, AR181:1, AR232:1, AR177:1, AR227:1, AR226:1, AR222:1,
				AR256:1, AR169:1, AR238:1, AR297:1, AR275:1, AR204:1, AR211:1 L0439:7, H0013:5, S0222:3, L0759:3,
				L0794:2, H0144:2, L0005:1, H0052:1, L0351:1 and L0742:1.
	HFPCX09	835390	694	
	HFPCX09	598723	695	

199	HFPCX36	526635	509	AR207:23, AR185:7, AR282:6, AR242:5, AR246:4, AR215:4, AR096:4, AR060:3, AR240:3, AR224:3, AR225:2, AR205:2, AR201:2, AR221:2, AR169:2, AR170:2, AR183:2, AR089:2, AR172:1, AR217:1, AR296:1, AR198:1, S0222:1
200	HFPCX64	1309796	210	AR254:65, AR250:61, AR253:59, AR053:38, AR313:35, AK310:31, AK176:31, AKL252:1, AR254:65, AR250:61, AR253:59, AR309:28, AR309:28, AR293:28, AR257:28, AR260:28, AR286:30, AR211:29, AR262:28, AR309:28, AR266:26, AR175:26, AR256:25, AR216:25, AR196:27, AR196:27, AR196:27, AR196:25, AR294:24, AR191:24, AR188:24, AR175:24, AR176:24, AR196:25, AR294:24, AR294:24, AR191:24, AR188:24, AR176:24, AR269:24, AR264:24, AR264:24, AR270:23, AR191:24, AR180:23, AR173:23, AR096:23, AR177:24, AR269:24, AR268:22, AR296:22, AR291:21, AR291:21, AR297:21, AR297:22, AR192:22, AR297:21, AR297:
	HFPCX64	877637	969	
	HFPCX64	638851	269	
	HFPCX64	514187	869	AB163.6
201	HFRAN90	520368	211	AR186:7, AR221:7, AR052:7, AR161:6, AR242:6, AR162:6, AR253:6, AR176:6, AR109:6, AR163:0, AR250:6, AR251:7, AR052:7, AR161:5, AR261:5, AR181:5, AR281:5, AR281:4, AR261:4, AR281:3, AR261:4, AR281:3, AR281:2, AR2

AR275:1, AR104:1, AR311:1, AR219:1, AR039:1, AR217:1, AR222:1, AR194:1, AR170:1, AR241:1 S0050:1	AR300:4, AR104:4, AR240:4, AR277:3, AR060:3, AR185:3, AR055:3, AR299:2, AR316:2, AR282:2, AR219:2, AR089:2, AR283:2, AR218:2, AR089:2, AR283:2, AR218:2, AR089:2, AR283:2, AR218:2, AR089:2, AR218:2, L0771:2, L0759:2, L0591:2, H0341:1, H0661:1, S0408:1, H0601:1, H0497:1, H0123:1, L0471:1, H0051:1, H0252:1, H0673:1, H061:1, H0651:1, H0659:1, L0771:1, L0773:1, L0768:1, L0775:1, L0375:1, L0564:1, L0665:1, S0374:1, H0519:1, H0659:1, H0521:1, H0522:1, L0747:1, L0749:1, L0758:1, L0758:1, L0758:1, L0758:1, L0758:1, L0758:1, L0788:1, L0747:1, L0749:1, L0758:1, L0758:1, L0748:1, L074	AR202:8, AR244:8, AR192:7, AR289:7, AR206:6, AR198:6, AR246:6, AR186:6, AR274:6, AR2423:6, AR282:5, AR204:5, AR204:5, AR282:5, AR204:5, AR204:5, AR204:5, AR206:5, AR206:4, AR206:3, AR206:2, AR206:1, AR	AR254:20, AR250:17, AR252:16, AR253:15, AR240:12, AR245:11, AR282:11, AR290:10, AR161:10, AR163:10, AR162:10, AR199:10, AR164:9, AR165:9, AR188:9, AR200:9, AR234:9, AR229:9, AR166:9, AR247:9, AR268:8, AR197:8, AR246:8, AR216:8, AR247:9, AR268:7, AR268:7, AR209:7, AR203:7, AR203:6, AR193:6, AR203:6, AR193:6, AR203:6, AR203:6, AR203:6, AR203:6, AR203:6, AR203:6, AR203:6, AR203:5, AR203:5, AR203:5, AR203:4, AR203:4, AR203:4, AR203:4, AR203:4, AR203:4, AR203:4, AR203:4, AR203:3, AR203:2, AR203:3,		AR221:3, AR055:3, AR168:3, AR242:3, AR180:3, AR161:3, AR163:2, AR060:2, AR195:2, AR172:2,
AR275: S0050:1	212 AR SO HO LO HO	213 AR AR AR AR AR AR	214 24 24 24 24 24 24 24 24 24 24 24 24 24 2	669	215 AI
	545012	695976	1300736	565076	601402
	HFTBM50 5.	HFTDL56 6	HFVAB79 13	HFVAB79 5	HFXAM76 6
	202	203	204		205

		`	
AR264:2, AR039:2, AR178:2, AR275:2, AR164:2, AR207:1, AR282:1, AR266:1, AR283:1, AR183:1, AR183:1, AR165:1, AR165:1, AR212:1, AR210:1, AR193:1, AR166:1, AR089:1, AR257:1, AR246:1, AR283:1, H0457:9, L0766:7, H0046:5, H0650:4, H0658:2, L0769:3, L0439:3, H0716:2, H0656:2, H0254:2, H0255:2, H0333:2, H0026:2, H0083:2, H0628:2, L0761:2, L0800:2, H0658:2, L0750:2, H0254:2, H0265:1, H0661:1, S0001:1, S0042:1, S0376:1, S0376:1, S0360:1, H0722:1, S0045:1, H0550:1, H0643:1, L0435:1, H0643:1, L0663:1, L0663:1, L0663:1, L0663:1, L0663:1, L0663:1, L0663:1, H0672:1, S036:1, H0532:1, L0663:1, L0664:1, L0665:1, H0672:1, S030:1, H0539:1, H0518:1, H0521:1, S0406:1, H0555:1, H0445:1, S0406:1, H0555:1, H0436:1, H0543:1, H0672:1, S0027:1, S0028:1, L0744:1, L0749:1, L0745:1, H0445:1, S0434:1, H0136:1, S0276:1 and H0542:1, H0672:1, L0744:1, L0744:1, L0745:1, H0445:1, S0434:1, H0136:1, S0276:1 and H0542:1, L0744:1,	206 HFXDJ75 626114 216 AR055:15, AR060:14, AR299:8, AR089:7, AR1604:7, AR185:7, AR096:6, AR277:3, AR260:2, AR267:2, AR282:5, AR316:5, AR039:5, AR218:3, AR240:3, AR176:3, AR178:3, AR266:2, AR267:2, AR313:2, AR309:2, AR221:2, AR053:2, AR197:2, AR296:2, AR219:2, AR177:2, AR288:2, AR288:2, AR263:2, AR286:2, AR286:1, AR286:1, AR165:1, AR196:1, AR196:1, AR196:1, AR196:1, AR196:1, AR290:1, AR29	207 HFXDN63 553685 217 AR161:4, AR162:4, AR204:4, AR225:4, AR163:4, AR271:3, AR270:3, AR270:3, AR288:2, AR288:2	208 HFXGT26 745381 218 AR254:6, AR180:6, AR215:6, AR165:5, AR106:5, AR104:3, AR205:4, AR255:4, AR255:4, AR255:4, AR252:4, AR163:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:3, AR224:3, AR204:4, AR183:4, AR309:4, AR309:4, AR182:3, AR266:3, AR266:3, AR268:3, AR306:3, AR204:3, AR204:3, AR204:3, AR204:3, AR204:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR205:3, AR207:2, AR272:2, AR272:2, AR272:2, AR216:2, AR207:2, AR207:2, AR203:2, AR205:2, AR205:2

				AR214:2, AR174:2, AR243:2, AR061:2, AR232:2, AR287:1, AR104:1, AR195:1, AR199:1, AR199:1, AR033:1, AR190:1, AR285:1, AR281:1, AR291:1, AR291:1, AR291:1, AR190:1, AR190:1, AR286:1, AR2
209 H	HFXGV31	526253		AR277.7, AR055:6, AR180:6, AR176:5, AR060:5, AR161:5, AR162:5, AR269:5, AR163:5, AR182:4, AR228:4, AR181:4, AR233:4, AR266:4, AR104:4, AR225:3, AR263:3, AR270:3, AR267:3, AR242:3, AR261:3, AR264:3, AR183:3, AR170:3, AR261:3, AR264:3, AR164:3, AR177:3, AR261:3, AR166:3, AR196:3, AR170:3, AR288:3, AR166:3, AR192:3, AR168:3, AR288:3, AR166:3, AR289:3, AR286:3, AR287:3, AR281:3, AR172:3, AR191:3, AR191:3, AR173:3, AR286:3, AR286:3, AR290:2, AR281:3, AR173:3, AR281:2, AR281:1, AR2821:1, AR2821:1, A
210	HFXHD88	589523	220	AR241:13, AR313:13, AR161:12, AR162:12, AR164:12, AR242:12, AR163:12, AR165:11, AR229:11, AR192:10, AR194:9, AR173:9, AR263:9, AR198:9, AR196:9, AR196:9, AR052:8, AR178:8, AR186:11, AR192:10, AR194:9, AR173:9, AR263:7, AR293:7, AR297:7, AR292:7, AR226:7, AR258:7, AR300:7, AR251:7, AR251:7, AR243:6, AR243:6, AR243:6, AR243:7, AR243:7, AR293:7, AR293:7, AR300:7, AR251:7, AR176:7, AR243:6, AR243:3, AR244:1, AR244:1, AR252:1, S0001:1, AR283:3, AR283:2, AR253:2, AR233:3, AR316:3, AR316:3, AR316:3,
211 F	HFXJU68	1352218	221	AR182:8, AR176:8, AR309:7, AR228:7, AR269:7, AR267:6, AR229:6, AR268:6, AR181:6, AR266:6, AR178:6, AR233:6, AR197:6, AR270:6, AR201:6, AR201:6, AR162:6, AR161:6, AR163:5, AR168:5,

AR204:5, AR257:5, AR261:5, AR177:5, AR207:5, AR165:5, AR193:5, AR236:5, AR271:5, AR293:5, AR055:5,	AR238:5, AR104:5, AR259:3, AR225.3, AR089:4, AR224:4, AR179:4, AR175:4, AR296:4, AR214:4, AR183:5, AR291:4, AR060:4, AR255:4, AR089:4, AR224:4, AR252:4, AR272:4, AR272:4, AR273:4, AR274:4, AR272:4, AR272:4, AR272:4, AR272:4, AR272:4, AR139:3, AR173:3, AR173:3, AR173:3, AR173:3, AR173:3, AR290:3, AR173:3, AR173:3, AR272:4, AR2	AR299:3, AR222:3, AR294:3, AR096:3, AR295:3, AR234:3, AR033:3, AR222:3, AR216:3, AR218:3, AR299:3, AR2	AR232:3, AR240:3, AR190:3, AR283:3, AR285:3, AR246:3, AR203:2, AR172:2, AR277:2, AR189:2,	AR308:2, AR297:2, AR188:2, AR199:2, AR200:2, AR104:2, AR311:2, AR25:5, AR217:1:2, AR245:1 AR223:2, AR212:2, AR210:2, AR260:2, AR211:2, AR275:2, AR313:2, AR313:1, AR219:1, AR245:1		222 AR161:7, AR162:7, AR163:7, AR243:6, AR250:3, AR176:3, AR103:3, AR223:3, AR153:3, AR153:3, AR164:4	AR233:5, AR271:4, AR246:4, AR182:4, AR106:4, AR035:4, AR226:4, AR237:4, AR275:4, AR236:4,	AR266:4, AR269:4, AR112:4, AR253:4, AR169:3, AR255:3, AR293:3, AR177:3, AR267:3, AR201:3,	AR291:4, AR223:4, AR221:3, AR2715:3, AR274:3, AR296:3, AR179:3, AR288:3, AR229:3, AR247:3,	AP285-3 AR205-3 AR270:3, AR294-3, AR175-3, AR287-3, AR290-3, AR263-3, AR221-3, AR196-3,	AR191-3 AR312.3. AR240:3, AR238:3, AR223:3, AR217:3, AR262:3, AR300:3, AR207:3, AR277:3,	AR268:3, AR173:3, AR230:3, AR272:3, AR234:3, AR286:3, AR192:3, AR295:2, AR096:2, AR289:2,	AR061:2, AR311:2, AR200:2, AR213:2, AR204:2, AR190:2, AR214:2, AR168:2, ARZ32:2, AR188:2,	AR224:2, AR226:2, AR313:2, AR227:2, AR033:2, AR169:2, AR308:2, AR060:2, AK198:2, AK089:2,	AR178:2, AR203:2, AR282:2, AR185:2, AR195:2, AR222:2, AR316:2, AR055:2, AR199:2, AR180:2,	AR299:2, AR189:1, AR258:1, AR210:1, AR215:1, AR260:1, AR211:1, AK252:1, AK250:1, AK250:1	S0282:1, H0619:1 and H0581:1.	223 AR282:3, AR225:3, AR176:3, AR250:3, AR270:3, AR173:3, AR104:3, AR105:3, AR172:3, AR196:2.	AR257:3, AR161:3, AR173:2, AR178:2, AR102:2, AR103:2, AR303:2, AR3	AR169:2, AR269:2, AR313:2, AR253:2, AR234:2, AR250:2, AR270:2, AR2	[AR171:2, AR239:2, AR229:2, AR256:2, AR237:2, AR293:2, AR272:3, AR233:2, AR203:1, AR203:1,	AR227:2, AR233:2, AR206:2, AR130:2, AR201:2, AR206:1, AR179:1, AR206:1, AR267:1,	AR1/4:1, AR108:1, AR256:1, AR240:1, AR180:1, AR199:1, AR262:1, AR294:1, AR183:1, AR285:1,	AR308:1 H0257:49, H0256:15 and S0282:1.	774 AP307.46 AP317.45 AP363:35 AR214:34, AR216:31, AR311:31, AR223:31, AR235:30, AR264:30,
					570855	505207												634161		-					A0770A
	,				HFXJU68	HFXKJ03												HFXKY27							
						212												213							

				AR222:30, AR192:27, AR309:26, AR170:26, AR266:26, AR168:25, AR195:25, AR195:25, AR224:24,
				AR308:24, AR223:23, AR198:23, AR213:23, AR197:22, AR033:22, AR233:22, AR2123:23, AR312:21, AR108:23, AR165:20, AR165:20, AR164:20, AR261:19, AR312:19, AR345:19, AR166:19,
				AR171:19, AR172:19, AR163:18, AR289:18, AR183:18, AR193:18, AR242:18, AR283:18, AR176:17,
•				AR196:17, AR297:17, AR246:17, AR236:17, AR205:17, AR201:16, AR288:16, AR271:16, AR033:16,
				AR180:15, AR285:15, AR253:15, AR286:15, AR296:15, AR204:15, AR252:15, AR282:15, AR2/2:14,
				AR177:14, AR240:14, AR174:14, AR239:14, AR229:14, AR287:14, AR247:14, AR293:14, AR243:14,
				AR274:14, AR215:14, AR269:14, AR182:13, AR316:13, AR275:13, AR238:13, AR061:13, ARZ/0:13,
	,			AR221:13, AR262:12, AR181:12, AR300:12, AR089:12, AR255:12, AR294:12, AR200:12, AR257:12,
				AR226:11, AR268:11, AR250:11, AR231:11, AR199:11, AR104:11, AR053:11, AR313:11, AR178:11,
				AR179:11, AR175:11, AR039:10, AR228:10, AR227:10, AR267:10, AR234:10, AR219:10, AR223:10, AR258:10, AR188:9
				AK253:10, AK259:10, AK254:11, AK257:11, AK257:11, AK257:11, AK258:11, AK258:11, AK258:12, AK258:
				ARTISSIS, ARZIII:8, ARZIO:8, ARZIO:8, ARZIO:8, ARZIO:9, ARZIO:9, ARZIO:9, ARZIII:8, ARZIO:8,
				HONGS 2 HORSO 2 HONG 2 101942 HO413.2 HO660.2 L0748.2 L0731.2, L0758.2, H0624:1, H0170:1,
				H0171:1. H0484:1. H0483:1, H0661:1, S0354:1, H0580:1, H0729:1, H0741:1, H0734:1, S0278:1, H0587:1,
				H0497:1, L3653:1, H0156:1, H0618:1, H0318:1, H0597:1, H0150:1, H0567:1, L0471:1, H0012:1, T0010:1,
				H0292:1, H0428:1, L0483:1, H0617:1, H0211:1, H0038:1, H0040:1, H0634:1, H0551:1, H0412:1, H0059:1,
				T0041:1, H0494:1, S0440:1, H0509:1, L0369:1, L0772:1, L0764:1, L0768:1, L0775:1, L0657:1, L0659:1,
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				S3014:1, L0439:1, L0745:1, L0747:1, L0750:1, L0757:1, S0031:1, H0445:1, S0436:1, L0581:1, L0366:1,
				S0011:1 and H0506:1.
215	HGBHE57	566836	225	AR294:28, AR089:25, AR283:24, AR060:19, AR055:17, AR282:16, AR104:16, AR277:15, AR096:14,
				AR316:14, AR246:13, AR039:13, AR207:12, AR218:12, AR299:12, AR313:11, AR264:11, AR191:11,
				AR219:11, AR161:11, AR162:10, AR195:10, AR163:10, AR185:10, AR240:9, AR193:9, AR198:9, AR265:9,
				AR169:9, AR235:8, AR295:8, AR300:8, AR309:8, AR250:8, AR242:7, AR201:7, AR245:7, AR192:7,
				AR165:7, AR164:7, AR225:7, AR311:7, AR243:7, AR166:7, AR204:7, AR205:6, AR231:6, AR285:6,
				AR191:6, AR254:6, AR180:6, AR223:6, AR236:6, AR252:6, AR178:6, AR261:6, AR308:6, AR190:6,
				AR288:6, AR176:5, AR171:5, AR222:5, AR271:5, AR275:5, AR212:5, AR053:5, AR270:5, AR175:5,
				JAR255:5, AR183:5, AR181:5, AR291:5, AR188:5, AR213:5, AR177:5, AR286:5, AR297:5, AR189:5,
				AR196:5, AR269:5, AR312:5, AR174:5, AR214:5, AR173:4, AR257:4, AR253:4, AR199:4, AR182:4,
				AR272:4, AR247:4, AR168:4, AR266:4, AR296:4, AR262:4, AR258:4, AR033:4, AR293:4, AR287:4,
				AR224:4, AR290:4, AR200:3, AR216:3, AR268:3, AR172:3, AR289:3, AR179:3, AR210:3, AR226:3,
				AR211:3, AR239:3, AR260:3, AR267:3, AR217:3, AR217:3, AR203:2, AR236:2, AR256:2, AR257:2,

AR237:2, AR256:2, AR061:2, AR274:2, AR234:2, AR230:2, AR228:1, AR170:1, AR221:1 L0439:8, L0748:5, H0169:3, S0422:3, L0766:3, H0556:2, S0442:2, S0046:2, H0024:2, H0674:2, H0494:2, L0770:2, L0530:2, H0547:2, H0672:2, H0672:2, H0672:2, H0672:2, H0672:2, H0673:1, H0672:1, H0678:1, L0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0678:1, H0670:1, H0673:1, H0673:1, H0670:1, L0671:1, H0670:1, L0671:1, H0670:1, L0671:1, H0670:1, L0671:1, H0670:1, L0671:1, L0670:1, L0670:1, L0670:1, L0670:1, L0670:1, L0770:1, H0670:1, H0670:1, H0670:1, L0770:1, L0770:1, L0770:1, H0670:1, L0770:1, H0670:1, H0670:1, H0670:1, H0670:1, H0670:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, L0770:1, L0770:1, H0670:1, H0670:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, L0770:1, H0670:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, L0770:1, H0670:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, L0770:1, H0670:1, H0670:1, L0770:1, H0670:1, H0670:1, L0770:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, L0770:1, H0670:1, L0770:1, H0670:1, L0770:1, H0670:1, L0770:1, H0670:1, H0670:1, L0770:1, L0770:1, H0670:1, H067					8 AR309:11, AR096:10, AR196:10, AR089:9, AR218:9, AR219:9, AR313:9, AR204:9, AR104:9, AR104:9, AR210:0,
	226	701	702	227	228
	837220	838602	899864	520261	838603
	HGBB74	HGBIB74	HGBIB74	HGLAL82	HHAAF20
	216			217	218

	HIEAA08 638231 229 AR192:9, AR246:7, AR217:7, AR214:7, AR197:7, AR207:6, AR250:6, AR195:6, AR216:6, AR166:6, AR169:6, AR039:6, AR089:6, AR271:6, AR223:5, AR312:5, AR313:5, AR212:5, AR282:5, AR165:5, AR166:5, AR196:5, AR166:5, AR166:5, AR166:5, AR263:5, AR193:5, AR225:5, AR309:5, AR309:5, AR309:5, AR309:5, AR309:5, AR309:5, AR309:5, AR309:5, AR309:4, AR245:4, AR300:4, AR240:4, AR
--	--

AR200:3, AR188:3, AR218:3, AR173:3, AR183:3, AR285:3, AR180:3, AR189:3, AR283:3, AR270:3, AR268:3, AR268:3, AR297:3, AR268:3, AR268:3, AR268:3, AR268:3, AR268:3, AR268:3, AR268:3, AR288:3, AR288:3, AR288:2, AR270:3, AR190:3, AR181:3, AR258:2, AR226:2, AR2182:2, AR239:2, AR287:2, AR289:2, AR260:2, AR266:2, AR266:2, AR267:2, AR260:2, AR204:2, AR204:2, AR295:2, AR273:2, AR260:2, AR260:2, AR210:2, AR210:2, AR210:2, AR210:1, AR055:1, AR260:1, AR230:1, AR253:1, AR061:1, AR228:1, AR218:1, AR034::1 and H0542:1.	703	230	(231 AR226:23, AR238:16, AR227:15, AR237:11, AR173:9, AR313:8, AR101:8, AR102:1, AR237:11, AR169:5, AR164:7, AR163:7, AR166:7, AR089:7, AR178:6, AR178:6, AR180:5, AR183:5, AR247:5, AR169:5, AR164:7, AR169:7, AR169:7, AR269:4, AR200:4, AR200:4, AR200:4, AR200:4, AR200:4, AR200:4, AR200:4, AR275:4, AR275:4, AR096:4, AR242:4, AR177:4, AR185:4, AR188:3, AR189:3, AR264:4, AR258:4, AR174:3, AR181:3, AR260:3, AR212:3, AR295:3, AR218:3, AR218:3, AR209:3, AR209:3, AR218:3, AR209:3, AR209:3, AR209:3, AR209:3, AR203:2, AR209:2, AR209:3, AR209:3, AR209:3, AR209:3, AR209:2, AR
	623588	604124	823100
	HHEAA08	HHEBB10	ннема59
		220	221

				AR168:2, AR205:2, AR195:2, AR256:2, AR311:2, AR201:2, AR283:2, AR055:1, AR213:1, AR272:1, AR222:1, AR200:1, AR296:1, AR296:1, AR288:1, AR217:1, AR199:1, AR199:1, AR296:1, AR2
				AR190:1, AR262:1, AR286:1 L0771:5, L0766:4, L0748:4, L0734:4, H0351:3, S0003:2, H0326:2, F0613:2, S0422:2, H0144:2, L0438:2, S0013:2, L0747:2, L0756:2, L0759:2, H0170:1, S6024:1, H0656:1, S0110:1,
				H0662:1, H0176:1, S0356:1, S0360:1, L0717:1, S6016:1, S0222:1, H0438:1, H0156:1, H0575:1, H036:1,
				H0318:1, H0381:1, H0020:1, H0031:1, S0038:1, S0224:1, S0002:1, L0770:1, L0038:1, L0002:1, L077:1, L0552:1, L0653:1, L0608:1, L0653:1, L065
				L0777:1, L0731:1, S0031:1, L0581:1, S0192:1, S0194:1, H0543:1 and H0423:1.
222	HHEMA75	494099	232	AR245:10, AR207:7, AR197:7, AR242:6, AR169:6, AR282:6, AR221:6, AR243:6, AR195:5, AR224:5,
				AR309:5, AR198:5, AR089:5, AR171:5, AR201:5, AR250:5, AR165:5, AR311:5, AR164:5, AR039:5,
				JAR214:5, AR246:5, AR216:5, AR180:4, AR263:4, AR313:4, AR168:4, AR166:4, AR225:4, AR053:4,
				JAR222:4, AR205:4, AR170:4, AR253:4, AR283:4, AR161:4, AR252:4, AR299:4, AR254:4, AR193:4,
				AR162:4, AR172:4, AR271:3, AR235:3, AR192:3, AR196:3, AR274:3, AR163:3, AR223:3, AR295:3,
				AR312:3, AR060:3, AR264:3, AR177:3, AR288:3, AR272:3, AR261:3, AR316:3, AR178:3, AR308:3,
				AR257:3, AR217:3, AR183:3, AR175:3, AR291:3, AR188:3, AR285:3, AR191:3, AR174:3, AR236:3,
				JAR212:3, AR286:2, AR182:2, AR238:2, AR190:2, AR213:2, AR237:2, AR189:2, AR227:2, AR293:2,
				AR185:2, AR173:2, AR275:2, AR294:2, AR230:2, AR229:2, AR200:2, AR206:2, AR204:2, AR266:2,
				AR289:2, AR181:2, AR268:2, AR033:2, AR300:2, AR247:2, AR277:2, AR287:2, AR255:2, AR262:2,
				AR258:2, AR239:2, AR199:2, AR179:2, AR296:2, AR176:2, AR240:2, AR211:2, AR270:2, AR290:2,
				AR218:2, AR231:2, AR096:2, AR210:2, AR232:2, AR233:2, AR061:1, AR297:1, AR055:1, AR228:1,
				AR203:1, AR215:1, AR234:1, AR219:1, AR104:1, AR267:1, AR260:1, AR256:1 H0663:1, H0052:1,
				H0591:1, H0264:1, H0144:1, S0126:1, H0521:1, L0758:1, L0759:1 and H0543:1.
223	HHEMM74	941955	233	AR263:19, AR165:17, AR166:15, AR213:15, AR264:15, AR313:15, AR207:15, AR311:15, AR195:14,
				AR163:14, AR089:14, AR162:14, AR161:14, AR164:13, AR212:13, AR308:13, AR192:12, AR312:12,
				AR274:11, AR242:11, AR283:10, AR309:10, AR193:10, AR245:10, AR198:9, AR096:9, AR104:9, AR053:9,
				AR240:9, AR197:9, AR254:9, AR185:9, AR060:8, AR277:8, AR299:8, AR225:8, AR039:8, AR297:7,
				AR033:7, AR275:7, AR282:7, AR282:7, AR271:7, AR170:7, AR201:7, AR296:6, AR205:6, AR243:6,
				[AR253:6, AR246:6, AR316:6, AR221:6, AR235:6, AR222:6, AR171:6, AR300:6, AR247:6, AR223:6,
				AR214:6, AR204:6, AR272:5, AR293:5, AR224:5, AR217:5, AR295:5, AR169:5, AR055:5, AR172:5,
			_	AR250:5, AR168:5, AR294:4, AR287:4, AR215:4, AR216:4, AR261:4, AR236:4, AR289:4, AR286:4,
				AR257:4, AR288:4, AR180:4, AR291:4, AR285:4, AR178:3, AR266:3, AR270:3, AR196:3, AR188:3,
				AR262:3, AR177:3, AR174:3, AR258:3, AR183:3, AR181:3, AR200:3, AR179:3, AR255:3, AR199:2,
				AR173:2, AR175:2, AR182:2, AR061:2, AR238:2, AR290:2, AR189:2, AR229:2, AR230:2, AR226:2,
				AR191:2, AR203:2, AR211:2, AR234:2, AR176:2, AR233:2, AR239:2, AR231:2, AR228:2, AR227:2,

				AR256:1, AR260:1, AR268:1, AR210:1, AR190:1, AR219:1, AR237:1, AR267:1, AR218:1, AR269:1, AR236:1, H0046:34, H0521:6, L0534:5, L0731:5, L0769:4, S0356:3, L0800:3, L0794:3, L0749:3, L0759:3, H0657:2, L0562:2, H0735:2, H086:2, L0805:2, L0809:2, L0789:2, L0744:2, L0760:3, L0760:3, L0762:3, L07
				HO455:1, H0600:1, H0586:1, H0333:1, H0331:1, H0635:1, H0618:1, H0618:1, H0634:1, H0063:1, H0060:1, H0620:1, H0620:1, H0636:1, H06
				H0551:1, H0264:1, S0002:1, L0639:1, L3905:1, L0771:1, L0648:1, L0706:1, L0637:1, L0378:1, L0523:1, L0569:1, H0660:1, L0743:1, L0777:1, H0445:1, S0436:1, L0097:1, S0194:1, H0542:1 and H0543:1.
	HHEMM74	906815	704	
	HIHEMM74	902458	705	
	HHEMM74	895682	902	\$ AB212.5 AD212.5 AD212.5 AD212.5 AB212.5 AB212.5
224	HHENK42	493724	234	AR180:6, AR165:5, AR245:5, AR164:5, AR204:5, AR039:5, AR100:5, AR315:5, AR245:5, AR162:3,
				AK183:4, AK089:4, AK270:4, AK170:3, AK182:3, AK282:3, AK197:3, AK225:3, AK185:3, AK300:3,
				AR053:3, AR263:3, AR243:2, AR252:2, AR312:2, AR221:2, AR274:2, AR237:2, AR268:2, AR271:2,
				AR267.2, AR193.2, AR247.2, AR195.2, AR161.2, AR179.2, AR234.2, AR277.2, AR174.2, AR299.2,
				AR060:2, AR316:2, AR233:2, AR308:2, AR224:2, AR255:2, AR240:1, AR286:1, AK288:1, AK230:1,
				AR264:1, AR176:1, AR226:1, AR239:1, AR293:1, AR169:1, AR192:1, AR1
225	HHENP27	799532	235	AR273:270, AR245:185, AR271:171, AR241:170, AR211:158, AR207:155, AR244:155, AR206:150,
1				AR274:145, AR205:144, AR192:139, AR212:137, AR246:132, AR312:121, AR213:121, AR213:124,
				AR247:122, AR242:119, AR243:119, AR272:116, AR311:115, AR310:115, AR309:114, AR1/4:110,
				AR235:110, AR053:109, AR177:108, AR052:105, AR263:103, AR096:101, AR150:101, AR250:103,
	مد جميد			AR313:98, AR281:97, ARZ91:96, ARZ01:95, ARZ15:51, AR158:50, ARZ7:50; AR28:81, AR28:8
				AR195:86, AR218:86, AR203:84, AR197:03, AR175:83, AR185:03, AR219:77, AR039:76, AR240:76,
				AKI/0:81, AKZ/3:81, AKZ04:19, AKZ04:17, AKZ04:73, AKZ24:73, AKZ22:72, AKI68:72,
				AR213.17.1 AR194.70 AR285:68. AR191:67, AR256:67, AR252:66, AR270:65, AR288:64, AR297:63,
				AR173:63, AR251:63, AR183:62, AR181:60, AR292:60, AR308:58, AR189:57, AR223:56, AR290:56,
				AR260:56, AR254:55, AR299:54, AR163:54, AR178:53, AR182:52, AR262:52, AR296:51, AK186:51,
				AR179:51, AR316:51, AR289:51, AR200:50, AR283:49, AR255:48, AR259:48, AR193:48, AR269:44,
			·	AR293:47, AR161:47, AR180:47, AR282:46, AR266:46, AR202:46, AR294:45, AR268:44, AR225:44,
				AR190:43, AR249:43, AR287:43, AR162:43, AR253:42, AR298:42, AR248:42, AR258:41, AK184:41,
				AR300:41, AR089:41, AR185:41, AR033:40, AR267:40, AR203:37, AR260:37, AR230:33, AR230:37,

				AR231:32, AR257:31, AR055:30, AR104:28, AR229:25, AR061:25, AR238:24, AR230:23, AR060:23,
				AR224:22, AR237:21, AR220:21, AR222:21, AR104:20, AR105:24, AR227:10, AR228:10 L0731:6, H0542:5, L2800:4, H0617:4, H0547:4, L0758:4, S0420:3, H0013:3, L0748:3,
				L0747:3, S0358:2, L3278:2, L0770:2, L0769:2, S0126:2, L0439:2, L0751:2, L0777:2, L0757:2, H0543:2,
				S0040:1, L3012:1, H0341:1, S0046:1, H0550:1, H0497:1, H0333:1, H0427:1, H0618:1, H0253:1, S0474:1,
				H0052:1, H0546:1, H0571:1, L0471:1, H0024:1, H0051:1, H0083:1, S6028:1, H0286:1, H0622:1, H0644:1,
_				L0455:1, H0063:1, T0067:1, H0561:1, S0440:1, H0133:1, H0529:1, L0/63:1, L0/7:1, L03/2:1, L0662:1,
				1.0806:1, 1.0807:1, 1.0659:1, 1.5622:1, 1.4501:1, 1.0666:1, 1.0664:1, 1.0709:1, 1.2261:1, 1.0144:1, 1.2402:1,
				80374:1, H0520:1, L3831:1, H0555:1, S0027:1, L0740:1, L0750:1, L0752:1, L0759:1, S0436:1, L0592:1,
_				L0604:1, S0398:1, L3837:1 and H0677:1.
226	HHEN022	589958	236	AR197:6, AR039:3, AR255:3, AR205:2, AR170:2, AR215:2, AR089:2, AR230:2, AR309:2, AR207:2,
	,			AR225:2, AR269:2, AR172:2, AR216:2, AR252:2, AR096:1, AR243:1, AR178:1, AR282:1, AR257:1,
				AR263:1, AR163:1, AR193:1, AR161:1, AR162:1, AR268:1, AR272:1, AR231:1, AR246:1 H0543:1
227	HHEPD24	498227	237	AR170:3, AR163:3, AR272:3, AR261:3, AR171:2, AR161:2, AR180:2, AR162:2, AR274:2, AR224:2,
				AR250:2, AR214:2, AR282:2, AR240:1, AR275:1, AR257:1, AR201:1, AR183:1, AR242:1, AR178:1,
				AR216:1, AR179:1, AR195:1, AR277:1, AR252:1, AR089:1, AR269:1, AR060:1, AR289:1, AR193:1,
		•		AR189:1, AR212:1, AR283:1 H0543:1
228	HHEPM33	877639	238	AR263:38, AR207:37, AR311:31, AR264:30, AR212:29, AR195:27, AR309:27, AR308:26, AR165:26,
				AR164:25, AR053:24, AR166:24, AR213:24, AR161:23, AR162:23, AR192:23, AR198:22, AR163:22,
				AR245:22, AR246:22, AR312:21, AR089:21, AR271:21, AR205:21, AR223:20, AR277:20, AR214:19,
				AR193:19, AR197:19, AR224:19, AR274:18, AR169:18, AR282:18, AR222:18, AR252:18, AR242:17,
				AR217:17, AR283:17, AR240:16, AR039:16, AR216:16, AR275:15, AR215:15, AR235:15, AR172:15,
				AR104:15, AR201:15, AR168:15, AR171:14, AR060:14, AR096:14, AR170:14, AR225:14, AR261:14,
				AR313:14, AR243:14, AR033:14, AR253:14, AR055:13, AR316:13, AR272:13, AR204:12, AR250:12,
				AR221:12, AR185:12, AR219:12, AR295:12, AR254:11, AR288:11, AR291:11, AR247:11, AR297:11,
				AR299:11, AR287:10, AR286:10, AR236:10, AR285:10, AR300:9, AR177:9, AR210:9, AR196:9, AR296:8,
				[AR176:8, AR218:8, AR211:8, AR226:7, AR293:7, AR289:7, AR266:7, AR258:7, AR181:7, AR199:7,
				AR174:7, AR262:7, AR191:7, AR061:6, AR257:6, AR238:6, AR173:6, AR178:6, AR200:6, AR175:6,
				AR232:6, AR270:6, AR188:6, AR294:6, AR269:6, AR255:6, AR256:6, AR182:6, AR260:5, AR183:5,
				AR239:5, AR229:5, AR227:5, AR189:5, AR290:5, AR231:5, AR234:5, AR179:5, AR180:5, AR237:4,
				AR190:4, AR203:4, AR268:4, AR233:4, AR267:4, AR230:4, AR228:3 L0777:9, H0617:5, S0418:3, H0618:3,
				H0556:2, H0489:2, H0253:2, H0560:2, L0770:2, L0803:2, L0789:2, S0328:2, H0436:2, H0444:2, H0543:2,
				H0265:1, H0685:1, S0218:1, H0657:1, S0116:1, H0484:1, S0420:1, S0356:1, S0354:1, S0358:1, S0444:1,
				S0360:1, H0637:1, L0103:1, S0007:1, H0441:1, H0559:1, H0486:1, H0599:1, H0042:1, H0575:1, H0052:1,

			Т	Τ-	\neg
H0597:1, H0545:1, H0373:1, H0594:1, H0266:1, T0023:1, H0553:1, H0063:1, H0551:1, H0100:1, H0646:1, H0529:1, L0371:1, L0662:1, L0766:1, L0804:1, L0774:1, L0378:1, L0806:1, L0805:1, L0655:1, L0659:1, L0809:1, L0663:1, H0698:1, H0547:1, S3012:1, S0028:1, L0731:1, S0436:1, S0192:1, H0542:1 and H0352:1, L0809:1, L0663:1, H0698:1, H0547:1, S3012:1, S0028:1, L0731:1, S0436:1, S0192:1, H0542:1 and H0352:1.			77	38 AP 218-6 AR 316:6. AR 185:5.	
	239	240	707	708	241
	463027	838217	897457	535730	905849
	HHEPT60	HHEPU04	HHEPU04	HHEPU04	HHFEC49
	229	230			231

				AR296:2, AR223:2, AR224:2, AR171:1, AR193:1, AR180:1, AR033:1, AR212:1, AR172:1, AR257:1, AR178:1, AR201:1 H0050:4, S0126:4, H0521:4, L0747:4, H0013:3, S0003:3, L0768:3, L0666:3, H0670:3, L0768:3, L076
				NO 122:3, LO 131:3, LO 139:3, LO 139:3, SO 132:3, LO 130:3, LO 130
				H0686:1, H0713:1, S0114:1, H0483:1, H0662:1, S0418:1, S0420:1, S0356:1, S0358:1, S0376:1, S0132:1,
				H0645:1, S6026:1, H0331:1, H0485:1, H0427:1, S0280:1, L0021:1, H0042:1, S0010:1, H0052:1, H0052:1, H0053:1, H00
				H0012:1, H0024:1, H0021:1, S0388:1, H0333:1, L0223:1, H0173:1, S0214:1, H0252:1, F068:1, S0636:1, H0633:1, H0612:1, H0613:1, H061
				H0652:1, S0210:1, L0770:1, L3904:1, L0667:1, L0662:1, L0794:1, L0804:1, L0775:1, L0776:1, L0661:1,
		···-		L0809:1, L0791:1, S0052:1, H0702:1, S0374:1, H0435:1, H0660:1, S0330:1, S0044:1, S0406:1, H0576:1,
				H0631:1, S3014:1, S0206:1, L0756:1, L0779:1, L0396:1, L0394::1, S0242:1 and H0306:1.
232	HHFGR93	865581	242	AR184:4, AR282:3, AR217:3, AR183:3, AR266:3, AR242:2, AR269:2, AR257:2, AR223:2, ARZ70:2,
				AR274:2, AR182:2, AR291:2, AR250:1, AR235:1, AR175:1, AR162:1, AR268:1, AR290:1, AR280:1,
	•	-		AR204:1, AR214:1, AR177:1, AR275:1, AR194:1, AR224:1, AR206:1, AR296:1, AR2
		-		AR186:1, AR284:1 L0754:41, L0747:8, H0553:5, L0755:5, L0659:4, H0124:3, H0265:2, H0356:2, H0386:2,
				H0427;2, H0575;2, H0050;2, L0471;2, H0616;2, H0056;2, L0764;2, L0662;2, L0794;2, L0748;2, L0751;2,
				L0749.2, L0750.2, H0305:1, S0358:1, S0045:1, S0046:1, H0619:1, H0441:1, H0485:1, S0280:1, H0599:1,
				H0042:1, H0046:1, H0569:1, H0024:1, H0051:1, H0328:1, H0030:1, H0644:1, H0361:1, H0040:1, H0413:1,
				S0038:1, L0770:1, L0769:1, L0800:1, L0644:1, L0363:1, L0803:1, L0804:1, L0775:1, L0806:1, L0783:1,
		•		L0666:1, L0665:1, H0144:1, S0146:1, H0555:1, S3012:1, L0779:1, L0731:1, L0605:1, L0599:1, L0603:1,
				H0543:1, H0422:1 and H0506:1.
	HHFGR93	691402	709	
233	HHFHJ59	411332	243	AR241:5, AR249:5, AR310:5, AR186:4, AR251:4, AR052:4, AR282:3, AR171:3, AR055:3, AR309:3,
	•			AR224:3, AR176:3, AR033:3, AR248:3, AR184:3, AR206:3, AR247:3, AR061:2, AR312:2, AR180:2,
				AR253:2, AR183:2, AR204:2, AR265:2, AR217:2, AR295:2, AR299:2, AR188:2, AR264:2, AR268:2,
				AR292:2, AR198:2, AR238:2, AR233:1, AR213:1, AR182:1, AR235:1, AR277:1, AR060:1, AR291:1,
				JAR286:1, AR178:1, AR053:1, AR165:1, AR259:1, AR226:1, AR166:1, AR267:1, AR237:1, AR257:1,
				AR089:1, AR313:1, AR293:1, AR294:1, AR234:1, AR231:1, AR266:1, AR296:1, AR196:1, AR163:1,
				AR298:1, AR162:1, AR283:1, AR300:1, AR269:1, AR096:1, AR185:1, AR161:1, AR200:1, AR232:1
				L0748:9, H0620:6, L0439:6, L0766:5, L0774:5, H0657:4, L0758:4, S0358:3, H0617:3, L0740:3, L0747:3,
				L0752:3, S0360:2, S0278:2, H0492:2, H0150:2, H0102:2, L0769:2, L0662:2, L0806:2, L0527:2, H0696:2,
				S3014.2, L0756.2, L0755.2, L0731.2, L0759.2, L0591.2, H0422.2, H0556.1, H0295:1, H0656:1, H0341:1,
			_	H0661:1, S0418:1, S0420:1, S0356:1, S0410:1, L0717:1, H0575:1, H0318:1, H0421:1, S0049:1, H0597:1,
				H0545:1, H0050:1, H0012:1, L0492:1, H0239:1, H0394:1, H0424:1, H0181:1, H0103:1, H0413:1, H0039:1,

				H0575:1, H0564:1, H0068:1, H0509:1, L0769:1, L0637:1, L0643:1, L0764:1, L0662:1, L0804:1, L0806:1, L0527:1, L0783:1, L0382:1, L0664:1, H0144:1, H0690:1, H0682:1, H0670:1, H0694:1, H0626:1, L0743:1, L0777:1, L0780:1, L0755:1, H0343:1 and S0011:1.
	HHGCM76	383547	217	
237	HHGDF16	279890	247	AR309:11, AR264:11, AR176:10, AR228:9, AR161:9, AR266:9, AR162:9, AR180:9, AR229:9, AR268:8, AR163:8, AR178:8, AR269:8, AR164:8, AR165:8, AR182:8, AR313:8, AR253:8, AR263:7, AR198:7, AR198:7, AR198:7, AR217:7, AR217:7, AR217:7, AR238:7, AR238:7, AR239:7, AR255:6,
				AR312:6, AR183:6, AR174:6, AR296:6, AR177:6, AR272:6, AR267:6, AR188:6, AR274:6, AR235:6, AR235:6, AR09:6, AR096:6, AR060:6, AR275:6, AR261:6, AR191:6, AR223:6, AR224:5,
				AR201:5, AR226:5, AR300:5, AR196:5, AR053:5, AR189:5, AR245:5, AR316:5, AR179:5, AR231:5, AR271:5, AR217:5, AR240:5, AR2
				AR289:5, AR061:5, AR293:4, AR230:4, AR195:4, AR247:4, AR252:4, AR218:4, AR190:4, AR219:4,
				AR221:4, AR291:4, AR288:4, AR193:4, AR232:4, AR175:4, AR308:4, AR285:4, AR168:4, AR227:4,
				AR311:4, AR234:4, AR243:4, AR290:4, AR169:4, AR185:4, AR254:4, AR033:3, AR262:3, AR200:3,
				AK282:3, AK203:3, AK293:3, AK283:3, AK222:3, AK214:3, AK294:3, AK171:3, AK203:3, AK193:3, AK173:3, AK173:3, AK286:3, AK205:3, AK207:2, AK204:2, AK172:2,
				AR277.2, AR258.2, AR211:1, AR260:1 L0803:6, S0422:4, L0766:4, L0777:4, L0362:4, L0794:3, L0805:3,
				L0439:3, L0779:3, L0731:3, H0543:3, S0444:2, H0486:2, L0471:2, L0637:2, L0666:2, L0665:2, H0539:2,
				H0521:2, L0758:2, L0592:2, L0581:2, H0170:1, L3644:1, H0685:1, H0583:1, H0650:1, H0656:1, S0212:1,
_ =				S0442:1, S0376:1, H0580:1, H0733:1, H0339:1, H0749:1, S0300:1, L0717:1, H0333:1, H0331:1, H0013:1,
				H0156:1, L0021:1, H0581:1, S0362:1, S0003:1, L0483:1, H0038:1, H0634:1, H0616:1, T0067:1, H0412:1,
				H0641:1, S0142:1, L0598:1, L3905:1, L0646:1, L0662:1, L5564:1, L0774:1, L0651:1, L0776:1, L0607:1,
				L0527:1, L0657:1, L0659:1, L5622:1, L0788:1, L0791:1, L0793:1, L0663:1, H0144:1, S0310:1, L0438:1,
				L3828:1, H0435:1, H0658:1, H0670:1, S0328:1, S0330:1, L0745:1, L0747:1, L0749:1, L0756:1, L0759:1,
3		3,7,5	3,0	50260:1, H0443:1, 50430:1, L0399:1 and 50194:1.
238	HHGDW43	554613	248	AKIO1:1, AKIO5:1, AKIO2:1, AKI1/0:1, AKZ00:1, AKI02:0, AKIO3:0, AKI1/0:0, AKZ23:0, AKU33:0, AKZ23:0, AKZ23:0, AKZZ23:0, AKZZ23:0, AKZZZ23:0, AKZZZZ:0, AKZZZZ:0, AKZZZZ:0, AKZZZZ:0, AKZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZ:0, AKZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ
				AR177:5, AR255:5, AR257:5, AR228:5, AR175:5, AR238:5, AR289:5, AR237:5, AR239:5, AR183:4,
				AR053:4, AR197:4, AR061:4, AR313:4, AR272:4, AR261:4, AR089:4, AR174:4, AR231:4, AR270:4,
				AR230:4, AR296:4, AR104:4, AR271:4, AR308:4, AR264:4, AR285:4, AR277:4, AR201:4, AR240:4,
				AR173:4, AR179:4, AR247:4, AR293:4, AR262:4, AR254:3, AR291:3, AR300:3, AR226:3, AR096:3,
				AR252:3, AR316:3, AR236:3, AR193:3, AR196:3, AR213:3, AR312:3, AR288:3, AR200:3, AR185:3,
				AR191:3, AR246:3, AR227:3, AR299:3, AR282:3, AR283:3, AR287:3, AR189:3, AR297:3, AR199:3,
	•			AR295:3, AR207:3, AR290:3, AR311:3, AR224:3, AR286:3, AR232:3, AR234:3, AR250:2, AR219:2,

AR039:2, AR171:2, AR214:2, AR294:2, AR203:2, AR190:2, AR274:2, AR260:2, AR218:2, AR168:2, AR263:2, AR263:2, AR243:2, AR225:2, AR216:1, AR216:1, AR216:1, H0333:1 AR180:2, AR275:1, AR172:1, AR216:1, H0333:1 HHPEC09 695726 249 AR254:11, AR309:9, AR264:8, AR253:8, AR176:8, AR173:7, AR182:7, AR169:7, AR268:7, AR269:7, AR264:11, AR309:9, AR264:8, AR263:8, AR176:8, AR176:8, AR176:7, AR169:7, AR268:7, AR269:7, AR264:11, AR309:9, AR264:8, AR263:8, AR176:8, AR176:8, AR176:7, AR182:7, AR169:7, AR268:7, AR269:7, AR264:11, AR309:9, AR264:8,	07/060	HIPGO40 1299927 250 AR244:5, AR202:3, AR202:3, AR202:3, AR203:4, AR216:4, AR206:4, AR309:3, AR2215:3, AR228:3, AR2215:3, AR222:3, AR2024:3, AR204:3, AR289:3, AR248:3, AR215:3, AR284:3, AR181:3, AR269:3, AR269:3, AR204:3, AR282:3, AR282:3, AR282:3, AR282:3, AR282:3, AR282:3, AR282:2, AR182:2, AR182:2, AR182:2, AR182:2, AR182:2, AR208:2, AR192:2, AR208:2, AR208:1, H0620:1, H0638:1, H0638:1, H0688:1, H06888:1, H06888:1, H06888:1, H06888:1, H06888:1, H06888:1, H06888:1, H06888:1,
230		240

				H0252:1, H0063:1, H0059:1, H0625:1, L0667:1, L0768:1, L0653:1, L0659:1, L0783:1, L2260:1, H0702:1, H0701:1, H0539:1, H0518:1, H0727:1, L0366:1, H0543:1 and H0423:1.
	HHPGO40	753270	713	
	HHPGO40	696095	714	
241	HHPT165	490904	251	AR104:5, AR252:4, AR254:4, AR235:3, AR180:3, AR225:3, AR055:2, AR165:2, AR060:2, AR166:2, AR274:2, A
				AR240.2, AR266:1, AR168:1, AR294:1, AR286:1, AR177:1, AR275:1, AR243:1, AR269:1, AR039:1,
				AR175:1, AR288:1, AR089:1, AR289:1, AR229:1 L0805:14, L0439:8, L0770:5, L0438:5, L0752:5, L0776:3,
				L0759:3, S0010:2, L0769:2, L0771:2, L0745:2, L0777:2, L0753:2, L3111:1, S6026:1, S0300:1, H0351:1,
				H0353:1, H0363:1, S0026:1, S0036:1, H0413:1, S0112:1, S0210:1, L3040:1, L3747:1, L3660:1, L3741:1, L0741:1, L0741:1, L0750:1, L0750:1, L0780:1, S0194:1 and S0276:1.
242	HHSDX28	553494	252	JAR161:5, AR163:5, AR162:5, AR176:4, AR269:4, AR266:4, AR173:4, AR267:4, AR165:4, AR178:4,
!				AR183:4, AR264:4, AR164:3, AR225:3, AR228:3, AR166:3, AR229:3, AR180:3, AR233:3, AR182:3,
				AR270:3, AR240:3, AR217:3, AR230:3, AR196:3, AR257:3, AR089:3, AR242:3, AR313:3, AR262:3,
				AR247:3, AR309:3, AR239:3, AR177:3, AR300:3, AR175:3, AR226:3, AR268:3, AR181:3, AR296:3,
				AR293:3, AR221:3, AR236:2, AR222:2, AR255:2, AR179:2, AR238:2, AR289:2, AR096:2, AR231:2,
				AR234:2, AR199:2, AR223:2, AR237:2, AR286:2, AR227:2, AR060:2, AR203:2, AR191:2, AR288:2,
				AR316:2, AR290:2, AR275:2, AR287:2, AR061:2, AR277:2, AR294:2, AR197:2, AR261:2, AR250:2,
				AR174:2, AR188:2, AR189:2, AR168:2, AR282:2, AR272:2, AR274:2, AR258:2, AR190:2, AR291:2,
				AR200:2, AR295:2, AR311:2, AR299:2, AR210:1, AR055:1, AR285:1, AR212:1, AR185:1, AR193:1,
				AR104:1, AR216:1, AR219:1, AR297:1, AR253:1, AR218:1, AR260:1, AR254:1 S0051:1 and H0445:1.
243	HHSGW69	1031514	253	AR313:34, AR161:22, AR162:22, AR163:21, AR173:21, AR229:16, AR300:16, AR218:15, AR165:15,
!				AR164:15, AR242:15, AR166:15, AR096:14, AR089:13, AR175:13, AR260:12, AR234:10, AR256:10,
				AR240:10, AR247:9, AR185:9, AR233:9, AR282:9, AR060:9, AR237:9, AR258:8, AR238:8, AR230:8,
				AR226:8, AR192:7, AR193:7, AR231:7, AR264:7, AR275:7, AR228:7, AR312:7, AR177:6, AR316:6,
				AR174:6, AR179:6, AR039:6, AR274:6, AR245:6, AR053:6, AR198:6, AR239:6, AR197:6, AR299:5,
				AR213:5, AR195:5, AR204:5, AR212:5, AR243:5, AR219:5, AR293:5, AR272:5, AR277:5, AR236:4,
				AR227;4, AR263;4, AR104;4, AR271;4, AR309;4, AR178;4, AR246;4, AR308;4, AR181;4, AR311;4,
				AR201:3, AR285:3, AR205:3, AR283:3, AR250:3, AR214:3, AR297:3, AR235:3, AR033:3, AR211:3,
				AR196:3, AR199:3, AR294:3, AR289:2, AR232:2, AR183:2, AR221:2, AR286:2, AR207:2, AR188:2,
				AR169:2, AR257:2, AR200:2, AR055:2, AR296:2, AR189:2, AR061:2, AR168:2, AR203:2, AR268:2,
				AR290:2, AR182:2, AR224:2, AR261:2, AR295:1, AR191:1, AR269:1, AR216:1, AR291:1, AR225:1,
·				AR255:1, AR180:1, AR254:1, AR267:1, AR262:1, AR270:1, AR252:1 S0474:54, L0766:18, H0521:16,
				L0731:12, H0556:11, L0662:8, H0069:7, H0591:7, L0759:1, H0265:6, H0542:6, H0500:3, H0500:3, S0554:3,

H0749:5, H0012:5, H0090:5, H0494:5, H0529:5, L0805:5, H0436:5, L0758:5, L0601:5, S0114:4, S0134:4,	H0486:4, H0083:4, H0268:4, S0440:4, H0041:4, LU/101:4, LU/10:4, L0005:4, H0052:3, H0271:3, S0003:3, H0039:3, L0751:4, L0750:4, S0212:3, H0638:3, S0418:3, S0356:3, H0370:3, H0370:3, H0520:3, S0027:3, L0747:3, H0617:3, S0144:3, S0422:3, S0002:3, L0770:3, L0769:3, H0583:2, H0648:3, H0653:2, S0408:2, L0717:2, H0617:3, H0663:2, S0408:2, L0717:2, H0617:3, H0663:2, L0717:2, H0617:3, H0663:2, L0717:2, H0617:3, H0	L0777:3, L0757:3, H0667:3, H0136:3, H0422:3, H0552:3, H0565:2, H0622:2, H0598:2, H0135:2, H0551:2, H0549:2, H0013:2, H0599:2, H0575:2, H0549:2, L0649:2, L0806:2, L0659:2, L0559:2, H0100:2, T0042:2, H0625:2, H0509:2, H0646:2, L0646:2, L0641:2, L0649:2, L0806:2, L0659:2, H0509:2, H05	L0665;2, S0374;2, H0547;2, H0555;2, L0740;2, L0588;2, L0603;2, H0423;2, S0424;2, H0580;1, S0045:1, T0002:1, H0140:1, H0295:1, H0341:1, H0484:1, H0255:1, H0125:1, S0420:1, S0444:1, H0580:1, S0045:1, H0407:1, H0351:1, H0580:1, H0415:1, H0488:1, H0249:1, H0592:1, H0559:1, L0622:1, H0450:1, H0415:1, H0415:1, L0468:1, H04249:1, H0592:1, H0559:1, L0622:1, H0415:1, H0415:1, L0468:1, H0440:1, H0410:1, H0	H0002:1, H0706:1, H0004:1, H0253:1, H0318:1, H0421:1, H0251:1, H0543:1, H044:1, 10003:1, H0024:1, H0673:1, H0767:1, H076	H0/08:1, 50366:1, n0040.1, 11005.1, 11076:1, 110374:1, 110764:1, 110773:1, 110777:1, 110774:1, 80344:1, H0538:1, S0426:1, 113158:1, 110763:1, 110772:1, 110790:1, 110766:1, 110767:1, 1107767:1, 110767:1, 110767:1, 110767:1, 110767:1, 110767:1, 110767:1, 110767:1, 110767:1, 1107777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 110777:1, 11	H0702:1, H0519:1, S0126:1, H0689:1, H0690:1, H0435:1, H0666:1, S0328:1, H0522:1, H0696:1, S3014:1, S0028:1, L0741:1, L0744:1, L0749:1, L0779:1, L0755:1, S0260:1, H0445:1, S0434:1, H0665:1, S0028:1, L0741:1, L0744:1, L0749:1, L0779:1, L0779:1, L0755:1, S0260:1, H0445:1, S0434:1, H0665:1, S0028:1, L0741:1, L0744:1, L0749:1, L0749:1, L0779:1, L0779:1, L0755:1, S0260:1, H0445:1, S0434:1, H0665:1, L0749:1, L0779:1, L07	S0242:1, S0276:1, H0543:1 and S0412:1.		268-26. AB268-26. AB268-37. AB1086-37 AB268-26.	AR251:168, AR248:141, AR249:139, AR250:50, AR253:30, AR263:41, AR247:32, AR229:13, AR229:13, AR267:34, AR367:14, AR368:14, AR368:18, AR229:13,	AR184:12, AR269:10, AR274:9, AR194:8, AR175:8, AR316:7, AR247:7, AR202:7, AR313:7, AR234:7,	AR055:6, AR299:6, AR033:6, AR180:6, AR198:6, AR271:5, AR182:5, AR236:0, AR236:0, AR236:0, AR173:5	AR205:5, AR188:5, AR275:5, AR272:5, AR061:5, AR196:5, AR284:5, AR24:5, AR24:5, AR24:5, AR24:5, AR24:5, AR24:5,	AR189:5, AR203:5, AR199:5, AR237:5, AR179:4, AR039:4, AR200:4, AR292:4, AR186:3, AR282:3,	AR192:4, AR181:4, AR281:4, AR165:3, AR161:3, AR162:3, AR266:3, AR285:3, AR163:3, AR164:3,	AR231:3, AR185:3, AR052:3, AR215:3, AR295:3, AR212:3, AR243:3, AR309:3, AR221:3, AR166:3,	AR169:3, AR296:3, AR232:2, AR033:2, AR2223:4, AR2223:4, AR093:2, AR217:2, AR227:2, AR204:2,	AR308:2, AR280:2, AR250:2, AR293:1, AR312:1, AR214:1, AR261:1, AR294:1, AR236:1, AR216:1,	AR193:1, AR259:1, AR230:1 S0144:10, L0775:10, S0278:6, H0638:5, H0580:5, H0641:5, L0438:3, S0428:3,	0521:5, H0740:4, H0392:4, H0522:4, L0/4/:4, SV400:3, FIV/47:3, AVAILLE TO
H	正立正	<u>D E E</u>	PHE	(ES)	ī O F	<u> 1 차 </u>	S	715	917	254					3					
			 , -					853442	905219	461438										
								8 69MSSHH												
										244										

				C.ATTA T. C. STORY A COLUMN CONTROL OF LOCAL ACTION TO A COLUMN C
				H0658:3, H0402:2, S0358:2, S0444:2, S0140:2, H0/4/:2, H0086:2, S0142:2, L0320:2, L0763:2, L0776:2, L0776:2, L0776:2, L0776:2, L0776:2, L0756:2, L07
				S0116.1. H0662.1, S0360.1, L3646.1, H0637.1, S0045.1, S0222.1, S6014.1, H0455.1, H0592.1, H0250.1,
				H0069:1, H0575:1, T0082:1, H0036:1, H0581:1, H0457:1, S0050:1, S0051:1, H0399:1, H0354:1, H0594:1,
			_	H0247:1, H0271:1, L0055:1, S0036:1, S0038:1, S0438:1, H0646:1, L0769:1, L0764:1, L0375:1, L0787:1,
				S0053:1, S0374:1, H0682:1, H0648:1, H0710:1, S0152:1, H0727:1, L0744:1, L0755:1, L0731:1, L0758:1,
			П	L0599:1, L0603:1, H0423:1 and H0352:1.
245	HJABX32	487807	255	AR060:16, AR055:15, AR271:11, AR282:10, AR104:10, AR089:9, AR283:9, AR299:8, AR253:7, AK185:7, AR060:16, AR0655:15, AR185:7, AR060:16, AR0655, AR185:7, AR060:16, AR0655, AR185:7, AR060:16, AR060:1
				AR197-5 AR243-5 AR178-4 AR218-4 AR291-4, AR2291-4, AR224-4, AR196-4, AR275-4, AR277-4,
				AR245; 4, AR266; 4, AR172; 4, AR053; 4, AR313; 4, AR309; 4, AR228; 4, AR192; 4, AR225; 4, AR168; 4,
	-			AR264:4, AR270:4, AR169:3, AR162:3, AR165:3, AR222:3, AR164:3, AR177:3, AR166:3, AR250:3,
	-			AR204:3, AR161:3, AR240:3, AR207:3, AR183:3, AR246:3, AR229:3, AR182:3, AR033:3, AR268:3,
				AR261:3, AR267:3, AR195:3, AR201:3, AR175:3, AR272:3, AR254:3, AR247:3, AR238:3, AR289:3,
				AR233:3, AR179:3, AR242:3, AR295:3, AR180:3, AR163:2, AR296:2, AR230:2, AR288:2, AR274:2,
				AR226.2, AR231.2, AR219.2, AR294.2, AR239.2, AR255.2, AR297.2, AR293.2, AR212.2, AR236.2,
				AR232:2, AR234:2, AR237:2, AR290:2, AR312:2, AR173:2, AR227:2, AR287:2, AR181:2, AR205:2,
				AR191:2, AR214:2, AR217:2, AR061:2, AR171:2, AR257:2, AR200:2, AR189:2, AR311:2, AR216:2,
				AR188:2, AR256:1, AR199:1, AR286:1, AR190:1, AR174:1, AR252:1, AR170:1, AR211:1, AR260:1
				L0157:3, L0748:2, L0731:2, H0656:1, L0005:1, S0408:1, H0729:1, S0278:1, H0261:1, L3653:1, H0101:1,
				H0052:1, L0471:1, H0024:1, H0424:1, H0213:1, T0041:1, H0647:1, L0769:1, L0363:1, L0774:1, L0806:1,
				L0805:1, L0776:1, L0807:1, L0657:1, H0519:1, S0406:1, H0627:1 and L0744:1.
246	HJACA79	562729	256	AR313:30, AR165:21, AR166:19, AR161:19, AR162:19, AR164:19, AR163:19, AR089:17, AR173:16,
				AR242:15, AR300:14, AR096:13, AR247:12, AR192:12, AR229:12, AR299:11, AR204:10, AR178:10,
				AR197:10, AR180:10, AR312:10, AR240:10, AR177:9, AR175:9, AR174:9, AR264:9, AR183:9, AR053:9,
				AR176:8, AR226:8, AR270:8, AR234:8, AR179:8, AR238:8, AR181:8, AR185:8, AR309:8, AR233:8,
				AR257:8, AR196:8, AR268:7, AR212:7, AR193:7, AR182:7, AR316:7, AR274:7, AR195:7, AR269:7,
				AR198:7, AR060:7, AR213:7, AR039:7, AR275:6, AR245:6, AR231:6, AR207:6, AR191:6, AR250:6,
				AR169:6, AR201:6, AR237:6, AR243:6, AR104:5, AR272:5, AR271:5, AR239:5, AR277:5, AR258:5,
				AR199:5, AR230:5, AR308:5, AR267:5, AR236:5, AR228:5, AR263:5, AR203:5, AR266:5, AR200:4,
				AR033:4, AR282:4, AR262:4, AR189:4, AR227:4, AR246:4, AR188:4, AR261:4, AR205:4, AR218:3,
				AR254:3, AR283:3, AR055:3, AR235:3, AR311:3, AR232:3, AR061:3, AR172:3, AR171:2, AR190:2,
	c <u></u>	_		
				AR289:2, AR285:2, AR294:2, AR286:1, AR291:1, AR296:1, AR217:1, AR253:1, AR252:1 H0580:1,

S0140:1, H0264:1 and T0041:1.	AR207:37, AR195:33, AR283:32, AR263:32, AR264:29, AR223:28, AR214:28, AR089:24, AR055:24, AR202:27, AR309:27, AR311:27, AR212:26, AR169:26, AR316:25, AR224:24, AR096:24, AR055:24, AR197:23, AR213:23, AR282:22, AR104:22, AR245:22, AR171:22, AR218:22, AR192:21, AR217:21, AR161:21, AR163:20, AR308:20, AR165:20, AR168:20, AR216:20, AR170:20, AR217:21, AR261:17, AR261:	İ	AR263:8, AR165:8, AR250:8, AR162:7, AR161:7, AR205:7, AR196:7, AR196:7, AR106:1, AR4104:1, AR215:1, AR163:7, AR198:7, AR250:6, AR205:6, AR216:6, AR270:6, AR207:6, AR309:6, AR246:6, AR174:5, AR223:5, AR224:5, AR165:5, AR171:5, AR223:5, AR224:5, AR176:5, AR311:5, AR183:5, AR308:5, AR254:5, AR173:5, AR224:5, AR176:5, AR176:5, AR176:5, AR176:5, AR176:5, AR176:5, AR176:5, AR176:5, AR177:5, AR269:4, AR269:4, AR269:4, AR201:5, AR204:4, AR218:15, AR274:4, AR190:4, AR276:4, AR295:4, AR201:5, AR188:4, AR189:4, AR277:4, AR201:4, A		
	257	717	258	718	210
	1307789	509948	895505	821341	000772
	HIACG02	HJACG02	HJACG30	HJACG30	0000
	247		248		

645	HJBAV55	823510	259	AR104:27, AR060:19, AR033:12, AR264:11, AR263:11, AR086:11, AR085:11, AR213:10, AR311:10, AR312:10, AR313:9, AR316:9, AR308:8, AR182:7, AR161:7, AR162:7, AR089:7, AR309:7, AR311:10, AR312:10, AR313:9, AR316:9, AR308:8, AR182:7, AR161:7, AR162:7, AR083:6, AR282:6, AR039:6, AR185:5, AR300:5, AR212:5, AR212:5, AR282:6, AR282:6, AR039:6, AR185:5, AR300:5, AR212:5, AR212:5, AR282:4, AR180:4, AR274:4, AR270:4, AR165:4, AR181:4, AR180:4, AR228:3, AR276:3, AR277:3, AR277:3, AR277:3, AR237:3, AR237:3, AR239:3, AR233:3, AR2823:3, AR283:3, AR287:3, AR287:3, AR287:3, AR287:3, AR287:3, AR179:3, AR2823:3, AR2823:
				L3388:1, H0351:1, S0222:1, L3653:1, H0244:1, H0156:1, H0457:1, L0157:1, S0051:1, S6028:1, H0119:1, T0006:1, T0042:1, L3905:1, L0667:1, L0768:1, L0387:1, L0789:1, L0438:1, H0539:1, S0152:1, S0013:1, H0555:1, H0436:1, H0576:1, S0031:1, S0260:1 and H0445:1.
250	HJBCU04	877643	260	AR31215, AR310:6, AR055:3, AR168:3, AR228:3, AR171:3, AR292:3, AR205:3, AR272:2, AR266:2, AR290:2, AR055:2, AR298:2, AR178:3, AR171:3, AR172:2, AR251:2, AR270:2, AR266:2, AR290:2, AR290:2, AR298:2, AR298:2, AR298:2, AR290:2, AR290:2, AR290:2, AR298:2, AR290:2, AR290:2, AR290:2, AR290:2, AR290:1, AR2

				H0633:1. S0142:1. S0210:1, L0598:1, H0529:1, L0520:1, L0772:1, L0646:1, L0374:1, L0771:1, L0648:1,
				L0521:1, L0662:1, L0767:1, L5568:1, L0499:1, L0650:1, L0805:1, L0379:1, L0607:1, L0807:1, L0657:1, L06
				L0659:1, L0783:1, L0384:1, L5623:1, L0787:1, L0789:1, L0532:1, L0664:1, L0709:1, L2657:1, L2653:1,
				L2264.1, H0144.1, H0698.1, L3811.1, H0547.1, S0122.1, H0689.1, H0660.1, H0666.1, S0328.1, S0378.1,
				H0709:1, H0518:1, S0136:1, H0521:1, H0522:1, S0406:1, H0436:1, H0436:1, H072/:1, S3012:1, L0730:1,
_				L0755:1, L0731:1, L0757:1, L0758:1, S0434:1, L0480:1, S0026:1, H0136:1, S0156:1, 110542:1 and 11052:1.
251	HJMBI18	545492	261	AR214:33, AR222:32, AR169:27, AR235:25, AR224:25, AR225:25, AR201:24, AR106:21, AR169:21,
				AR213:20, AR217:20, AK1/0:20, AK1/1:20, AK1/1:15, AK212:15, AK210:15, AK205:11, AK309:15, AK213:20, AK17:20, AK
				AR225:16, AR196:16, AR164:16, AR215:10, AR221:10, AR306:13, AR306:13, AR306:13, AR306:13, AR306:13, AR306:13,
				AR311:15, AR295:15, AR242:14, AR192:14, ARZ45:14, AR1/7:15, ARZ01:15, ARZ05:12, AR311:15, AR311:15, AR311:15,
			_	AK252;12, AK197;12, AK266;12, AK156;12, AK101;12, AK162;12; AK193;10, AK240;10, AK277:10,
			_	AR10011, AR211111, AR211111, AR1111111, AR111111, AR21111, AR21111, AR21111, AR21111, AR211111, AR211111, AR211111, AR211111, AR211111, AR211111, AR211111, AR211111, AR211111, AR21111, AR21111, AR21111, AR21111, AR21111, AR21111, AR21111, AR2111,
				AROOUTH, ARZITTER, ARZESTER, FRIGGER, AROOF, AR221:9, AR229:8, AR219:8, AR201:8, AR283:8,
				AR270.8, AR175.8, AR218.8, AR238.8, AR055.8, AR189.8, AR296.8, AR250.8, AR200.7, AR254.7,
				AP286.7 AP201.7 AP203.7 AP247.7 AP262.7 AP227.7. AR226.7, AR286.7, AR289.7, AR239.7,
				AR233-7 AR231-7 AR243-7, AR191-7, AR204-6, AR258-6, AR275-6, AR104-6, AR230-6,
				AR257.6 AR190.6 AR180:6 AR237:6. AR178:6, AR183:6, AR234:5, AR270:5, AR255:5, AR274:5,
				AR294.5, AR260.5 AR226.5, AR203.5, AR290.5, AR179.5, AR179.5, AR269.4, AR228.4, AR266.4,
				AP768-4 AR176-4 AR233-4 AR182-4 AR267:3 L0803:3, L0805:3, L0439:3, H0341:2, L0483:2, L0663:2,
				10427:1, H050:1, H0623:1, H0574:1, H0574:1, H0542:1, H0009:1, S0051:1, H0623:1, L0770:1,
				10759-1 10764-1 10766-1 L0776-1 L0518-1 L0783-1 L0438-1 H0651-1 L0748-1 L0740-1 L0754-1
				1.0745:1 1.0756:1 1.0779:1 1.0758:1, L0591:1, L0592:1, H0543:1 and H0293:1.
636	UTAKDNISO	565675	267	AP273-75 AR263:23, AR235:22, AR214:22, AR311:21, AR224:21, AR168:20, AR222:19, AR196:17,
767	CONTOUNING	Cincoc	101	AR217:17. AR264:17. AR215:17, AR169:17, AR171:16, AR295:16, AR170:16, AR221:15, AR172:15,
				AR163:15 AR261:15, AR216:15, AR225:15, AR309:14, AR236:14, AR161:13, AR162:13, AR287:13,
				AR177:13. AR286:13. AR288:13, AR240:12, AR285:12, AR165:12, AR297:12, AR164:11, AR282:11,
				AR165:10 AR308:10 AR174:10, AR199:10, AR293:10, AR191:10, AR291:10, AR176:10, AR188:10,
				AR046:9 AR275:9 AR211:9, AR175:9, AR219:9, AR247:9, AR316:9, AR258:9, AR181:9, AR200:9,
				AR190:9, AR210:9, AR189:9, AR183:8, AR269:8, AR289:8, AR203:8, AR277:8, AR312:8, AR104:8,
				AR262:8, AR270:8, AR255:8, AR296:8, AR234:8, AR218:8, AR290:7, AR260:7, AR089:7, AR231:7,
				AR173.7, AR294.7, AR226.7, AR213.7, AR227.7, AR268.7, AR033.7, AR233.7, AR257.7, AR060.7,
				AR055.7. AR300:7. AR239:6, AR299:6, AR313:6, AR232:6, AR230:6, AR185:6, AR266:6, AR053:6,
				AR212:6, AR238:6, AR180:6, AR229:6, AR274:6, AR178:6, AR061:5, AR267:5, AR182:5, AR179:5,

				AR228:5, AR256:5, AR237:5, AR272:4, AR283:4, AR039:2, AR207:2, AR205:1, AR246:1 H0458:1, H0013:1, H0545:1, H0413:1, L0768:1, L0747:1, L0777:1 and H0445:1.
253	HIMBT65	596795	263	AR214:25, AR223:21, AR207:21, AR224:20, AR263:20, AR235:20, AR169:19, AR308:19, AR309:19, AR222:19, AR165:18, AR168:17, AR164:16, AR166:16, AR172:16, AR171:16, AR221:16, AR217:16, AR222:19, AR165:18, AR168:17, AR164:16, AR166:16, AR172:16, AR217:16, AR221:13, AR222:13, AR222:13, AR264:15, AR170:15, AR209:14, AR207:11, AR218:11, AR288:11, AR297:11, AR207:11, AR277:11, AR291:7, AR291:9, AR285:8, AR286:9, AR286:9, AR286:8, AR286:8, AR286:8, AR286:8, AR286:9, AR287:6, AR289:6, AR289:6, AR289:6, AR299:6, AR297:6, AR299:6, AR297:6, AR299:6, AR297:6, AR297:6, AR299:6, AR297:6, AR297:6, AR297:6, AR297:6, AR297:6, AR297:6, AR297:5, AR297:6, AR297:5, AR297:1, H0013:1, L0079:1, H0059:1, L0790:1, L0790:1, L0663:1, H0144:1, L0438:1, H0658:1, H0651:1, L0743:1, L0790:1, L0790:1, L0809:1, L0790:1, L0790
254	нлив w 30	491209	264	AR245:16, AR246:12, AR207:11, AR291:11, AR205:10, AR235:9, AR197:9, AR165:9, AR243:9, AR212:9, AR164:9, AR161:9, AR207:11, AR291:11, AR205:10, AR236:8, AR197:9, AR195:8, AR242:8, AR311:8, AR261:8, AR192:8, AR201:8, AR275:8, AR275:8, AR264:8, AR214:8, AR192:8, AR217:8, AR275:8, AR275:8, AR275:7, AR169:7, AR264:7, AR264:7, AR264:7, AR264:7, AR264:7, AR264:7, AR264:7, AR264:7, AR265:7, AR172:7, AR199:6, AR215:6, AR297:7, AR264:7, AR257:7, AR289:7, AR254:7, AR256:7, AR288:7, AR272:6, AR272:1, H0076:1, H0076:1, H0076:1, H0077:1, H0081:1, H0071:1, H0071:1, H0094:1, S0150:1,

				5054 1 50524.1 MO204.1 MO501.1 HOKOK.1 HOM78.1 I 0747.1 LO604:1 and S0011:1.
			Т	1.2034:1, 303/4:1, 10/24:1, 110/24:1, 110/24:1, 120/24:1
255	HJPAD75	651337	265	AR2777, AR215:2, AR282:2, AR246:2, AR225:2, AR250:2, AR215:2, AR1724, AR215:1, AR265:1, AR265:1, AR166:1, AR257:1, AR265:1, AR265
				AR270:1, AR177:1, AR285:1, AR195:1, AR291:1, AR217:1, AR161:1, AR256:1 H0556:6, L0769:4,
				L0771:4, H0265:3, L0764:3, H0083:2, S0142:2, L0794:2, L0803:2, L0789:2, L0792:2, L0438:2, L0754:2,
				L0747:2, L0749:2, L0757:2, S0356:1, S0444:1, S0360:1, H0013:1, S0010:1, H0421:1, H0263:1, H0290:1,
				L0157:1, L0471:1, H0553:1, H0628:1, H0690:1, H0561:1, S0372:1, L2270:1, S0422:1, L060:1;, L0708:1,
				L0776:1, L0809:1, H0658:1, H0648:1, S0330:1, H0521:1, H0134:1, S0027:1, L0748:1, L0756:1, LU753:1,
				L0731:1, S0434:1, L0592:1 and H0542:1.
256	HKAAE44	564406	566	AR249:3, AR215:3, AR263:3, AR184:3, AR171:3, AR282:3, AR224:3, AK214:2, AK205:2, AK100:2,
}				AR172:2, AR310:2, AR197:2, AR217:2, AR168:2, AR222:3, AR198:2, AR274:1, AR053:1, AR189:1,
				AR238:1. AR297:1, AR161:1, AR165:1, AR216:1, AR295:1, AR265:1, AR275:1, AR275:1, AR225:1,
-				AR203-1 AR272:1 AR239-1, AR194:1, AR193:1 S0007:5, L0742:5, L0731:5, S0444:4, L0769:4, L0766:4,
				n740-4 10747-4 10749-4 10756:4 100596:4 H0031:3 10065:3 10775:3 10809:3 20126:3 10759:3
				S013-64.5 H04318.2 H00831.2 L03711.2 L07701.2 L0702.2 L08031.2 L07761.2 L07831.2, H05551.2 L04391.2,
				1 0755-2 1 0758-2 50436-2 1 0591:2 50011:2, H0556:1, H0685:1, H0656:1, H0341:1, S0418:1, S0442:1,
				10/1512, 2015012, 2015012, 1001311, H06321, H001311, H034911, H054611, H056611, S002211, H013511,
		_		HOAGE: HOG 16: 180786: HOAGE: 1. SO438: 1. HO130: 1. HO646: 1. LO637: 1. L3905: 1. L0761: 1. L0372: 1.
				DROOF 1.0767:1, L0794:1, L0517:1, L0647:1, L0666:1, L0663:1, H0144:1, T0068:1, H0520:1, H0690:1,
				80330:1 H0521:1 S3012:1 L0777:1 H0543:1 and H0352:1.
250	2011 A VIII	125222	267	AP277-44 AP207-74 AR252-19 AR197-18, AR192-17, AR195-17, AR308-15, AR198-15, AR263-14,
72	DCHAANII 0	1335335		AP2001.11, AP165-13 AR164-13 AR166:13 AR205:13, AR245:12, AR312:11, AR264:11, AR246:11,
				AR201.14, AR103.10, AR271.11, AR235.10, AR162.10, AR161:10, AR163.10, AR193.10, AR253.10,
				AR243:9, AR254:10, AR223:9, AR250:9, AR309:9, AR243:9, AR214:9, AR254:9, AR177:8, AR213:8,
				AR295:8, AR247:8, AR204:8, AR204:8, AR261:8, AR285:7, AR212:7, AR170:7, AR216:7, AR288:7,
				AR168:7 AR297:7, AR286:7, AR174:7, AR219:7, AR217:7, AR181:7, AR233:7, AR224:7, AR226:7,
				AR223:6, AR239:6, AR171:6, AR274:6, AR227:6, AR061:6, AR232:6, AR291:6, AR234:6,
				AR280-6, AR240-6, AR275:6, AR199:6, AR231:6, AR287:6, AR096:6, AR269:5, AR294:5, AR230:5,
				AR262.5. AR200.5. AR039:5, AR293:5, AR180:5, AR189:5, AR296:5, AR237:5, AR257:5, AR179:5,
				AR208:5, AR188:5, AR313:5, AR191:5, AR178:5, AR300:5, AR203:5, AR267:5, AR196:5, AR175:5,
				AR238:5. AR033:5. AR211:5. AR176:5, AR270:5, AR190:4, AR316:4, AR089:4, AR183:4, AR290:4,
				AR225:4, AR172:4, AR185:4, AR255:4, AR210:4, AR282:4, AR173:4, AR266:4, AR258:4, AR182:4,
				AR169:4, AR060:3, AR256:3, AR299:3, AR260:3, AR221:2, AR218:2, AR283:2, AR055:2, AR104:2,
				AR219:1 H0494:14, H0435:3, L0747:3, L2654:2, H0661:1, S0348:1, H0592:1, H0586:1, H0253:1, H0188:1,

				L0386:1, L0376:1, L0657:1, L5623:1, L0793:1, H0683:1, L0750:1 and L0758:1.
	HKAAH36	1352331	720	
	HKAAH36	1352330	721	
	HKAAH36	836040	722	
	HKAAH36	838068	723	
	HKAAH36	812661	724	
	HKAAH36	590734	725	
258	HKAAK02	589945	268	AR215:6, AR169:5, AR235:5, AR263:5, AR207:5, AR225:5, AR222:5, AR217:5, AR172:4, AR192:4, AR224:4, AR214:4, AR161:4, AR223:4, AR213:4, AR162:4, AR309:4, AR165:4, AR264:4, AR282:4,
				AR089:4, AR242:4, AR171:4, AR308:4, AR166:4, AR197:4, AR311:4, AR170:4, AR240:4, AR221:3,
				[AR177:3, AR250:3, AR060:3, AR312:2, AR096:2, AR176:2, AR198:2, AR271:2, AR196:2, AR275:2,
				AR316:2, AR261:2, AR193:2, AR236:2, AR274:2, AR277:2, AR231:2, AR288:2, AR183:2, AR252:2,
				AR300:2, AR226:2, AR270:2, AR238:2, AR185:2, AR181:2, AR283:2, AR033:2, AR201:2, AR061:2,
				AR294:2, AR286:2, AR229:2, AR266:2, AR289:2, AR174:2, AR039:2, AR287:2, AR245:2, AR295:2,
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				AR233:1, AR211:1, AR175:1, AR179:1, AR199:1, AR204:1, AR293:1, AR190:1, AR218:1, AR268:1,
				AR210:1, AR291:1, AR227:1, AR237:1 H0622:6, L0754:4, L0374:3, L0809:3, L0731:3, L2522:2, H0036:2,
				H0039.2, L0800.2, L0665.2, H0435.2, L0748.2, S0358.1, H0270.1, H0618.1, H0253:1, H0030:1, H0100:1,
				H0494:1, S0440:1, L0772:1, L0642:1, L0645:1, L0771:1, L0662:1, L0789:1, H0648:1, S0406:1, L0751:1,
				L0749:1, L0750:1, L0780:1, S0434:1, S0436:1, L0362:1 and H0677:1.
259	HKABI84	565078	569	AR271:11, AR242:9, AR216:8, AR253:7, AR225:7, AR214:7, AR205:7, AR195:6, AR165:6, AR207:6,
				AR296:6, AR164:6, AR198:6, AR089:6, AR254:6, AR224:6, AR250:6, AR166:6, AR217:6, AR309:6,
				AR212:6, AR245:6, AR192:6, AR263:6, AR215:6, AR221:6, AR312:5, AR162:5, AR196:5, AR308:5,
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				AR222:5, AR264:5, AR223:5, AR311:5, AR060:5, AR204:4, AR197:4, AR188:4, AR274:4, AR261:4,
				AR175:4, AR201:4, AR172:4, AR285:4, AR189:4, AR316:4, AR039:4, AR169:4, AR171:4, AR173:4,
				AR300:4, AR268:4, AR282:4, AR176:4, AR199:4, AR104:4, AR033:4, AR168:4, AR235:4, AR190:4,
				AR200:4, AR240:4, AR295:3, AR288:3, AR257:3, AR277:3, AR252:3, AR291:3, AR297:3, AR203:3,
				AR238:3, AR286:3, AR177:3, AR294:3, AR174:3, AR289:3, AR191:3, AR183:3, AR210:3, AR283:3,
				AR185:3, AR180:3, AR255:3, AR178:3, AR247:3, AR290:3, AR262:3, AR269:3, AR230:3, AR293:3,
				AR270:3, AR287:2, AR226:2, AR181:2, AR258:2, AR275:2, AR219:2, AR267:2, AR218:2, AR239:2,

				AR179:2, AR232:2, AR234:2, AR272:2, AR237:2, AR229:2, AR231:2, AR061:2, AR233:2, AR236:2, AR2
				AK228;2, AK182;2, AK227;1, AK230;1, AK230;1, AK230;1, AK230;1, AK23;2, L3480;2, L3480;2, L3480;2, L3483;2, L0731;4, L0766;3, L0666;3, L066
				L0770.2, L0521.2, L0768.2, L0803.2, L0775.2, L0805.2, L0661.2, L0665.2, H0144.2, L3827.2, L3828.2,
				H0658:2, H06/0:2, S0406:2, L0439:2, L0/34:2, L0/49:2, L0/50:2, M3530:1, M3530:1, L3469:1, L2499:1, L2647:1,
				H0013:1. H0427:1, H0575:1, S0474:1, H0052:1, H0591:1, H0038:1, H0040:1, H0616:1, H0264:1, H0494:1,
				S0440.1, H0649.1, L0598.1, H0529.1, L0369.1, L0640.1, L3904.1, L0662.1, L0804.1, L0375.1, L0378.1,
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				H0435:1, H0539:1, H0696:1, S0176:1, H0555:1, H0785:1, L0747:1, L0755:1, L0757:1, L0758:1, L0608:1,
				L0362:1, S0026:1, S0424:1 and L3808:1.
260	HKAR765	862030	270	AR313:41, AR242:32, AR039:28, AR165:25, AR163:25, AR164:24, AR161:24, AR162:24, AR166:24,
3		}) 	AR089:24, AR096:23, AR173:22, AR196:20, AR193:20, AR299:20, AR300:20, AR258:20, AR180:19,
				AR175:19, AR178:18, AR240:18, AR229:18, AR234:18, AR185:17, AR247:17, AR218:17, AR262:17,
				AR179:16, AR285:16, AR183:16, AR269:16, AR293:15, AR174:15, AR199:15, AR182:15, AR181:15,
				AR238:14 AR191:14, AR296:14, AR236:14, AR257:14, AR316:14, AR270:14, AR226:13, AR219:13,
				AR297:13. AR277:13. AR264:12, AR200:12, AR312:12, AR195:12, AR213:12, AR192:12, AR203:12,
				AR268-12 AR212:12 AR294:12. AR286:11, AR060:11, AR230:11, AR177:11, AR189:11, AR233:11,
				AR255:9, AR287:10, AR198:10, AR290:10, AR188:10, AR204:10, AR053:9, AR287:9, AR288:9, AR255:9,
				AR295-9 AR033-9 AR261-9 AR282-9 AR104-9, AR245-9, AR243-9, AR235-9, AR228-8, AR308-8,
				AR205:8, AR275:8, AR201:8, AR201:8, AR214:8, AR237:7, AR197:7, AR239:7, AR224:7, AR311:7,
				AR176.7 AR267.7 AR172.7 AR256.7 AR223.7 AR205.7, AR171:6, AR271:6, AR168:6, AR214:6,
				AP2077.6 AR169-6 AR275:6 AR250:6 AR271:6, AR215:6, AR170:6, AR211:6, AR221:6,
				AR309:5, AR283:5, AR266:5, AR254:5, AR222:5, AR190:5, AR210:5, AR216:5, AR217:5, AR232:5,
				AR055:5, AR289:4, AR253:4, AR246:4, AR272:3, AR061:2 H0494:1
	HKABZ65	665424	726	E POOR - E COPE - ESTADA
261	HIKACB56	554616	27.1	AR223:8, AR235:8, AR263:7, AR222:7, AR170:7, AR221:7, AR207:7, AR216:7, AR169:1, AR224:1,
				AR168:7, AR171:7, AR311:7, AR198:7, AR309:7, AR214:0, AR223:0, AR033:0, AR127:0,
				AR215:6, AR089:6, AR264:6, AR245:6, AR205:5, AR217:5, AR165:5, AR163:5, AR161:5, AR162:5,
				AR164:5, AR166:5, AR275:5, AR308:5, AR213:5, AR172:5, AR312:4, AR27/1:4, AR246:4,
				AR196:4, AR060:4, AR271:4, AR282:4, AR195:4, AR295:4, AR261:4, AR269:4, AR230:4, AR316:4,
				AR181:4, AR288:4, AR176:4, AR055:3, AR240:3, AR204:3, AR297:3, AR283:3, AR313:3, AR177:3,
				AR210:3, AR285:3, AR242:3, AR296:3, AR039:3, AR199:3, AR096:3, AR173:3, AR272:3, AR236:3,
				AR200.3, AR252.3, AR254.3, AR238.3, AR175.3, AR291.3, AR193.3, AR299.3, AR247.3, AR191.3,

				ARUSSIS, ARIBOSS, ARZOOIS, ARZOSSIS, ARSOOIS, ARIBOSSIS, ARZOLIS, ARIBOSSIS, ARZOSSIS,
				AR226:2, AR239:2, AR061:2, AR182:2, AR200:2, AR203:2, AR227:2, AR255:2, AR183:2, AR190:2,
				AR233:2, AR211:2, AR231:2, AR257:2, AR267:2, AR228:2, AR243:2, AR258:2, AR258:2, AR179:1,
9,5	0.500 + 741.	20203		AK218:1, AK208:1, AK19:1, AK192:1, AK100:1, AK203:1 10434:4; E0045:1 and E000:1.
707	HKACDS	7077661	717	AR201:30, AR253:22, AR263:11, AR268:11, AR266:11, AR289:10, AR161:10, AR162:10, AR288:10,
				AR236:10, AR260:10, AR165:10, AR163:10, AR166:9, AR207:9, AR164:9, AR270:9, AR282:9, AR277:8,
				AR223:8, AR214:8, AR243:8, AR215:8, AR224:8, AR296:8, AR096:8, AR039:8, AR172:8, AR221:8,
				AR192:8, AR316:8, AR182:8, AR104:8, AR089:8, AR222:8, AR293:7, AR173:7, AR176:7, AR255:7,
			_	AR169:7, AR171:7, AR311:7, AR257:7, AR313:7, AR225:7, AR245:7, AR254:7, AR180:7, AR211:7,
				AR262:7, AR195:7, AR290:6, AR240:6, AR175:6, AR179:6, AR217:6, AR247:6, AR256:6, AR055:6,
				AR309:6, AR168:6, AR300:6, AR294:6, AR197:6, AR219:6, AR263:6, AR299:6, AR242:6, AR216:6,
				AR060:5, AR238:5, AR267:5, AR185:5, AR250:5, AR264:5, AR181:5, AR234:5, AR053:5, AR199:5,
				AR275:5. AR178:5. AR308:5. AR033:5, AR274:5, AR193:5, AR177:5, AR218:5, AR174:4, AR213:4,
				AR170:4, AR246:4, AR212:4, AR312:4, AR198:4, AR253:4, AR205:4, AR271:4, AR189:4, AR191:4,
				AR210:4, AR201:4, AR239:3, AR237:3, AR252:3, AR196:3, AR190:3, AR233:3, AR231:3, AR227:3,
				AR061:3, AR226:3, AR230:3, AR272:3, AR229:3, AR204:3, AR232:3, AR203:3, AR200:3, AR188:2,
				AR228:2 S0360:12, S0436:3, S0194:3, S0114:2, H0483:2, S0408:2, L3504:2, H0575:2, H0581:2, S0344:2,
				L2262.2, H0519.2, L0754.2, H0139.1, L2884.1, H0657.1, H0656.1, S0420.1, S0356.1, S0410.1, L2333.1,
				H0151:1, S0046:1, L3127:1, H0549:1, H0613:1, H0427:1, H0546:1, H0081:1, H0355:1, S0312:1, H0032:1,
				H0383:1, H0551:1, H0264:1, T0042:1, H0494:1, H0386:1, H0509:1, H0649:1, S0210:1, L0646:1, L0804:1,
				L0805:1, L0809:1, L5622:1, L2651:1, L2265:1, L2702:1, H0682:1, H0435:1, H0670:1, H0672:1, H0521:1,
				H0696:1, H0134:1, S0206:1, L0741:1, L0743:1, L0744:1, L0756:1, L0596:1, L0581:1, L0593:1, L0595:1,
				L0366:1, S0242:1, S0196:1, H0423:1 and H0506:1.
	HKACD58	552465	727	
263	HKACM93	1352383	273	AR194:22, AR206:21, AR202:20, AR244:20, AR284:18, AR205:17, AR241:14, AR281:13, AR315:13,
				[AR243:12, AR266:12, AR246:11, AR265:11, AR271:10, AR289:10, AR27/3:10, AK280:10, AK184:10,
				AR198:9, AR314:9, AR298:9, AR310:9, AR192:9, AR292:9, AR274:8, AR263:8, AR282:8, AR291:8,
				[AR296:8, AR270:8, AR269:7, AR183:7, AR285:7, AR232:7, AR268:7, AR227:7, AR286:7, AR231:7,
				AR204:7, AR238:6, AR033:6, AR295:6, AR186:6, AR251:6, AR247:6, AR240:6, AR221:6, AR275:5,
				AR290:5, AR277:5, AR312:5, AR248:5, AR182:5, AR283:5, AR299:5, AR267:5, AR234:5, AR300:4,
				AR039:4, AR055:4, AR249:4, AR294:4, AR313:4, AR061:4, AR177:4, AR229:4, AR096:4, AR175:4,
				AR226:4, AR233:4, AR213:4, AR293:3, AR237:3, AR39:3, AR052:3, AR219:3, AR316:3, AR253:3,

				AR089:3, AR217:3, AR215:3, AR252:3, AR053:3, AR172:3, AR163:3, AR185:2, AR104:2, AR235:2, AR259:2, AR264:2, AR260:2, AR060:2, AR196:2, AR162:2, AR256:2, AR181:2, AR161:2, AR258:2, AR257:2, AR171:1, AR224:1, AR169:1, AR179:1, AR245:1, AR210:1, AR211:1, AR212:1, AR218:1, AR176:1, AR193:1, H044:4, L0761:2, L0656:2, L0744:2, L0749:2, L0777:2, S0376:1, H0544:1, H0355:1, H0594:1, H0647:1, L0374:1, L0764:1, L0773:1, L0787:1, L0666:1, H0520:1, H0547:1, S0380:1, L0748:1 and H0594:1, H0647:1, L0374:1, L0764:1, L0773:1, L0787:1, L0666:1, H0520:1, H0547:1, S0380:1, L0748:1 and H0596:1, H0647:1, L0374:1, L0764:1, L0773:1, L0787:1, L0666:1, H0520:1, H0547:1, S0380:1, L0748:1 and H0596:1, H0647:1, L0374:1, L0748:1, L0773:1, L0787:1, L0666:1, H0520:1, H0547:1, S0380:1, L0748:1, L0566:1, H0547:1, L0574:1, L0748:1, L0748:1, L0566:1, H0547:1, L0574:1, L0748:1, L0748:1, L0566:1, L0748:1, L0748:1, L0566:1, L0748:1, L074
	HKACM93	907084	728	
	HKACM93	907085	729	
	HKACM93	906154	730	
	HKACM93	906150	731	AP234.5, AR239.5, AR224.5,
264	HKADQ91	604123	274	AR211:37, AR199:28, AR275:8, AR213:8, AR210:1, AR242.1, AR197:4, AR197:4, AR199:28, AR275:5, AR180:4, AR18:4, AR178:5, AR199:28, AR272:5, AR180:4, AR1819:4, AR169:3, AR169:3, AR255:3, AR270:3, AR1618:4, AR162:4, AR163:4, AR237:4, AR164:3, AR244:3, AR260:3, AR265:3, AR270:3, AR268:3, AR264:3, AR264:3, AR265:3, AR265:3, AR269:3, AR203:3, AR268:3, AR297:3, AR244:3, AR247:2, AR175:2, AR179:2, AR282:3, AR269:3, AR290:2, AR290:2, AR297:2, AR277:2, AR175:2, AR179:2, AR310:2, AR206:2, AR297:2, AR297:2, AR277:2, AR277:2, AR277:2, AR277:2, AR263:1, AR308:2, AR295:2, AR295:2, AR295:1, AR296:1,
265	HKAEG43	889521	275	AR214:32, AR223:28, AR263:27, AR224:20, AR215:21, AR223:19, AR311:18, AR309:21, AR172:21, AR225:20, AR215:20, AR223:19, AR308:10, AR171:19, AR309:21, AR172:21, AR225:20, AR215:216, AR162:16, AR1631:19, AR240:15, AR212:18, AR192:18, AR247:14, AR242:14, AR243:14, AR165:13, AR166:13, AR247:13, AR245:15, AR248:12, AR248:12, AR248:12, AR248:12, AR248:11, AR248:11, AR248:11, AR248:11, AR248:11, AR248:11, AR248:10, AR24

				AR243:8. AR262:7. AR183:7. AR178:7. AR188:7. AR204:7. AR231:7, AR200:7, AR258:7, AR269:7,
				AR257:7, AR189:7, AR219:7, AR230:6, AR173:6, AR238:6, AR234:6, AR270:6, AR191:6, AR268:6, AR255:6, AR260:5, AR2
				AR267:5, AR250:5, AR179:5, AR233:4, AR28:4, AR182:4 H0521:6, H0556:4, L0757:3, H0494:2, S0126:2, AR250:5, AR250:5, H056:1, H057:3, H067:4:1, H067:
		-		H0412:1, L0640:1, S0330:1, H0555:1, L0756:1, L0758:1, L0758:1, L0759:1, L0485:1, H0542:1 and H0543:1.
	HKAEG43	753273	732	
266	HKAEL80	270865	276	AR313:19, AR196:18, AR173:17, AR162:13, AR161:13, AR163:13, AR180:13, AR300:12, AR247:12, AR247:12, AR247:12, AR249:12, AR249:12, AR249:11, AR229:11, AR192:11,
				AR183:11, AR178:10, AR165:10, AR164:10, AR166:10, AR258:10, AR191:9, AR240:9, AR270:9, AR282:9,
				AR269:9, AR257:9, AR262:9, AR181:9, AR297:9, AR275:9, AR197:9, AR053:8, AR296:8, AR179:8,
				AR174:8, AR177:8, AR238:8, AR213:8, AR189:8, AR285:8, AR264:8, AR236:8, AR218:8, AR182:8,
				AR234:8, AR200:8, AR287:8, AR316:7, AR212:7, AR185:7, AR207:7, AR261:7, AR226:7, AR188:7,
				AR309:7, AR295:7, AR268:7, AR254:7, AR176:7, AR198:7, AR294:7, AR271:7, AR060:7, AR312:7,
				AR245:7, AR286:6, AR039:6, AR203:6, AR231:6, AR193:6, AR288:6, AR233:6, AR243:6, AR265:6,
				AR250:6, AR205:6, AR291:6, AR272:6, AR224:6, AR221:6, AR204:6, AR277:6, AR237:6, AR230:6,
				JAR195:5, AR168:5, AR267:5, AR201:5, AR255:5, AR222:5, AR219:5, AR225:5, AR235:5, AR104:5,
				AR274:5, AR260:5, AR263:5, AR033:5, AR170:5, AR172:5, AR290:5, AR289:5, AR239:5, AR311:5,
				AR190:4, AR246:4, AR283:4, AR169:4, AR228:4, AR308:4, AR256:4, AR214:4, AR227:3, AR171:3,
				AR055:3, AR232:3, AR217:3, AR223:3, AR210:3, AR061:3, AR211:2, AR216:1 L0766:2, L0791:2,
				L0748:2, L0758:2, H0494:1, L0772:1, S0216:1, L0750:1, L0777:1 and L0759:1.
267	HKAEV06	1352263	277	AR272:35, AR165:34, AR163:33, AR164:33, AR161:32, AR162:32, AR245:32, AR166:32, AR274:28,
				AR212:28, AR205:26, AR311:23, AR242:22, AR264:21, AR308:20, AR214:20, AR174:19, AR197:19,
				AR216:16, AR223:15, AR222:15, AR313:15, AR213:14, AR171:14, AR312:14, AR195:14, AR225:14,
				AR247:13, AR201:13, AR254:12, AR309:12, AR053:12, AR275:12, AR263:12, AR168:12, AR246:11,
				AR217:11, AR224:11, AR215:11, AR252:11, AR089:11, AR170:10, AR243:10, AR172:10, AR192:10,
				AR221:9, AR241:9, AR189:9, AR185:9, AR250:9, AR240:8, AR039:8, AR199:8, AR204:8, AR179:7,
				[AR198:7, AR169:7, AR096:7, AR193:7, AR177:7, AR188:7, AR297:6, AR253:6, AR236:6, AR249:6,
				AR300:6, AR262:6, AR271:6, AR277:6, AR183:6, AR104:6, AR261:6, AR299:6, AR234:5, AR239:5,
				AR194:5, AR173:5, AR181:5, AR265:5, AR257:5, AR316:5, AR288:5, AR207:5, AR190:5, AR060:5,
				AR282:5, AR180:5, AR233:5, AR230:4, AR231:4, AR293:4, AR176:4, AR178:4, AR290:4, AR287:4,
				AR191:4, AR196:4, AR291:4, AR238:4, AR255:4, AR296:4, AR235:4, AR273:4, AR289:3, AR270:3,
				AR266:3, AR052:3, AR203:3, AR229:3, AR200:3, AR206:3, AR228:3, AR294:3, AR283:3, AR295:3,
				AR033:3, AR175:2, AR269:2, AR268:2, AR248:2, AR210:2, AR237:2, AR182:2, AR285:2, AR258:2,

				1238 3 AB196.7 AB761.7 AB737.7 AR226.2 AR244.2, AR260.2, AR219.1, AR055.1,
				AR227:1, AR211:1, AR310:1, AR281:1, AR218:1, AR256:1 L0438:2, L0758:2, S0442:1, S0354:1, S0444:1,
				H0741:1, L0021:1, T0082:1, H0046:1, H0494:1, S0440:1, L3815:1, L0800:1, L0602:1, L5574:1, L0603:1, L0439:1, L0522:1, L0666:1, L0439:1, L0522:1, L0666:1, L0439:1, L0666:1, L0666:1, L0439:1, L0666:1, L0666:1, L0666:1, L0439:1, L0666:1, L0666:1, L0666:1, L0439:1, L0666:1, L06
				L0752:1, L0594:1 and H0543:1.
	HKAEV06	638238	733	C. Co. Co. Co. Co. Co. Co. Co. Co. Co. C
268	HKAFK41	545018	278	AR188:28, AR275:14, AR200:11, AR196:10, AR104:9, AR217:8, AR165:7, AR274:7, AR194:7, AR194:7, AR194:7, AR200:00, AR289:6, AR288:6, AR289:6,
				AR166:7, AR161:7, AR162:7, AR163:7, AR163:7, AR183:5, AR282:5, AR270:5, AR221:5, AR180:5,
				AR216:5, AR313:5, AR053:5, AR264:5, AR205:5, AR176:5, AR290:5, AR174:4, AR215:4, AR308:4,
				AR173:4, AR190:4, AR219:4, AR312:4, AR178:4, AR175:4, AR218:4, AR316:4, AR177:4, AR183:4,
	-			AR243.4, AR033.4, AR197.4, AR268.4, AR198.4, AR182.4, AR299.4, AR193.4, AK193.4, AR193.4,
				AR246:4, AR240:4, AR181:4, AR199:4, AR211:4, AR061:4, AR113:4, AR096:3, AR212:3, AR212:3,
				AR291:3, AR311:3, AR261:3, AR239:3, AR266:3, AR232:3, AR226:3, AR297:3, AR295:3, AR2923.3, AR2923.3, AR2923.3,
				AR255:3, AR237:3, AR296:3, AR309:3, AR309:3, AR201:3, AR236:3, AR262:3, AR202:3, AR201:3, AR202:3, AR2
				AR179:2, AR285:2, AR257:2, AR231:2, AR223:2, AR228:2, AR236:2, AR225:3, AR286:2, AR285:2,
				AR294.2, AR256.2, AR286.2, AR283.2, AR233.2, AR258.2, AR222.2, AR287.2, AR229.2, AR229.1, AR224:1,
				AR171:1, AR260:1, AR295:1, AR227:1 L0779:10, H0547:9, L0770:7, L0659:7, L0/54:7, S0010:6, L0439:0,
				L0740:6, L0663:5, H0013:4, L0809:4, H0539:4, L0747:4, L0756:4, L0731:4, L0759:4, S0360:3, H0136:3,
				H0581:3, H0090:3, H0412:3, H0494:3, S0438:3, L0774:3, L0755:3, L0757:3, L0758:3, S0434:3, L0393:3,
				H0542:3, S0282:2, S0356:2, H0486:2, S0049:2, H0046:2, L0471:2, S0003:2, H0428:2, H0616:2, 10042:2,
				S0440; 2, S0150; 2, S0002; 2, L0598; 2, H0529; 2, L0640; 2, L0646; 2, L0766; 2, L0776; 2, L0666; 2, L0776;
				L0665:2, H0520:2, H0519:2, S0126:2, S0152:2, S0406:2, L0748:2, L0596:2, L0599:2, S0470:1, H0717:1,
				L0778:1, S0212:1, S0001:1, S0418:1, S0354:1, S0376:1, S0444:1, S0408:1, S0410:1, S0408:1, H0013:1,
				L0717:1, S0278:1, H0369:1, S0222:1, S6014:1, H0409:1, H0587:1, H0574:1, H0532:1, 10039:1, H0427:1,
				H0042:1, S0346:1, H0421:1, T0115:1, L0040:1, H0231:1, H0546:1, H0545:1, T0010:1, S0214:1, H023:1,
				H0553:1, H0644:1, H0124:1, H0316:1, H0598:1, S0036:1, H0591:1, H0551:1, H047/:1, H04
_				S0014:1, H0625:1, S0144:1, S0422:1, L0762:1, L0769:1, L0638:1, L0667:1, L0643:1, L0764:1, L0649:1,
				L0803:1, L0775:1, L0375:1, L0806:1, L0805:1, L0652:1, L0653:1, L0655:1, L0655:1, L0656:1, H0144:1,
				H0711:1, H0684:1, H0660:1, H0672:1, H0521:1, H0696:1, H0627:1, L0742:1, L0772:1, L0722:1, S0031:1,
				S0436:1, L0589:1, L0591:1, L0608:1, L0594:1, H0653:1, H0667:1, H0543:1, H0423:1 and S0424:1.
260	HKDRF34	833065	279	AR060:22, AR244:10, AR194:8, AR241:8, AR238:6, AR281:6, AR192:6, AR206:6, AR205:6, AR246:6,
3				AR202:5, AR282:5, AR182:5, AR271:5, AR243:5, AR277:4, AR232:4, AR283:4, AR226:4, AR200:4,
				AR316:3, AR251:3, AR186:3, AR234:3, AR053:3, AR227:3, AR257:3, AR264:3, AR310:3, AR222:3,

				AR204:3. AR247:3. AR231:3. AR184:3. AR052:3. AR198:3. AR183:3, AR229:3, AR313:3, AR275:3,
				AR061:3, AR312:2, AR273:2, AR286:2, AR295:2, AR240:2, AR298:2, AR039:2, AR104:2, AR299:2,
				AR055:2, AR267:2, AR289:2, AR285:2, AR270:2, AR268:2, AR096:2, AR089:2, AR213:2, AR290:2,
			_	AR291:2, AR185:2, AR218:2, AR315:2, AR033:2, AR233:2, AR253:2, AR294:2, AR300:2, AR265:2,
				AR309:1, AR293:1, AR219:1, AR296:1, AR296:1, AR280:1, AR258:1, AR314:1 L0803:25, S0438:2,
	, character	0,020	12.5	LU//4:2, HUI/U:1, HUU13:1, HU526:1, HU622:1, HUU38:1, SUU13:1 and HU347:1.
	1	907/90	T	0,7004.
270	HKGAT94	762811	280	AR221:15, AR313:12, AR173:9, AR196:9, AR299:9, AR240:8, AR247:8, AR089:7, AR175:7, AR096:7, AR2240:8, AR2240:8
				ARCITT, ARCIEST, ARTONOST, ARCIEST, ARTOCSO, ARTOLSO, ARTOTTOS, ARCIEST, ARCIEST, ARCIEST, ARCIEST, ARTOCSO, ARCIEST, ARTOSSO, ARCIEST, AR
				AK105:0, AK105:0, AK100:0, AK1/2:0, AK104:0, AK25/:0, AK105:0, AK550:0, AK210:0, AK125:0, AK105:0, AK105:0, AK105:0,
				ARTITION, ARZINIO, ARXINONI, ARTIGONI, ARTITONI, ARTIGONI, ARTIGONI
				AR188:5. AR275:5. AR316:5. AR203:5. AR290:4. AR033:4. AR200:4. AR285:4, AR236:4, AR182:4,
				AR181:4, AR277:4, AR309:4, AR214:4, AR231:4, AR266:4, AR174:4, AR261:4, AR210:4, AR226:4,
				AR177:4, AR060:4, AR211:4, AR291:4, AR287:4, AR295:4, AR225:4, AR263:4, AR272:4, AR308:4,
				AR268:4, AR245:4, AR286:4, AR294:4, AR260:3, AR312:3, AR190:3, AR311:3, AR288:3, AR230:3,
				AR195:3, AR246:3, AR254:3, AR233:3, AR237:3, AR267:3, AR053:3, AR039:3, AR193:3, AR239:3,
				AR255:3, AR243:3, AR176:3, AR055:3, AR228:3, AR205:2, AR289:2, AR227:2, AR104:2, AR201:2,
				AR204:2, AR271:2, AR215:2, AR283:2, AR235:1, AR256:1, AR061:1, AR242:1, AR232:1, AR198:1
				H0166:1, H0538:1, L0657:1, L0809:1, L0665:1, H0539:1 and L0748:1.
	HKGAT94	460631	735	
271	HKGC027	601969	281	AR170:6, AR282:6, AR235:5, AR180:5, AR215:5, AR225:4, AR263:4, AR053:4, AR271:4, AR161:4,
				AR162:4, AR163:4, AR165:4, AR207:4, AR164:4, AR264:3, AR166:3, AR254:3, AR269:3, AR272:3,
				AR089:3, AR224:3, AR312:3, AR313:3, AR311:3, AR223:3, AR169:3, AR196:3, AR308:3, AR295:3,
				AR177:2, AR216:2, AR171:2, AR212:2, AR252:2, AR060:2, AR277:2, AR176:2, AR185:2, AR175:2,
				AR288:2, AR297:2, AR178:2, AR285:2, AR262:2, AR299:2, AR236:2, AR247:2, AR033:2, AR316:2,
				AR189:2, AR214:2, AR309:2, AR261:2, AR191:2, AR181:2, AR257:2, AR213:2, AR174:2, AR200:2,
				JR188:2, AR294:2, AR195:2, AR293:2, AR240:2, AR287:2, AR055:1, AR168:1, AR190:1, AR210:1,
				AR229:1, AR234:1, AR096:1, AR199:1, AR233:1, AR246:1, AR104:1, AR182:1, AR238:1, AR267:1,
				AR289:1, AR203:1, AR283:1, AR300:1, AR258:1, AR266:1, AR290:1, AR172:1, AR291:1, AR268:1
				H0538:1
	HKGC027	581293	736	
272	HKISB57	625956	282	AR161:12, AR162:12, AR163:12, AR165:12, AR164:11, AR166:11, AR089:8, AR225:7, AR178:6, AR183:6, AR170:4, AR200:4, AR201:4, AR201:
	1			ARI 12:0, AK 300:3, AR 224:3, AR 101:3, AR 221:3, AR 225:3, AR 170:3, AR 27:3, AR 27:3,

				AP223.4 AP274.4 AP274.4 APD56.4 AP277.4 AP269.4 AR258.4.
			•	ARU96:4, AR268:4, AR2/2:4, AR260:4, AR2/4:3, AR182:3, AR262:3, AR270:3, AR272:3, AR189:3,
		•		AR316.3, AR267.3, AR175.3, AR245.3, AR313.3, AR287.3, AR296.3, AR231.2, AR210.2, AR171.2,
				AR190:2, AR217:2, AR205:2, AR277:2, AR230:2, AR295:2, AR290:2, AR263:2, AR060:2, AR309:2,
			3.	AR191:2, AR228:2, AR229:2, AR104:2, AR261:2, AR288:3, AR1/4:2, AR282:4, AR240:4, AR230:2, AR191:1
				AR312:2, AR237:2, AR169:2, AR193:2, AR271:2, AR201:4, AR235:2, AR235:2, AR37:1, AR393:1,
				AR226:1, AR177:1, AR213:1, AR193:1, AR033:1, AR136:1, AR236:1, AR236:1, AR337:1, AR337:1, AR213:1, AR337:1, AR3
				HALLOLL, ANCORT, ANCORT, ANCORT, HO295.2, S0356.2, S0360.2, S0046.2, H0413.2, L0774.2, H0651.2,
		·		\$0027:2, L0748:2, L0439:2, L0752:2, L0601:2, H0484:1, S0132:1, H0586:1, H0333:1, H0486:1, H0042:1,
				H0122:1. H0546:1, H0041:1, H0050:1, H0408:1, H0288:1, H0688:1, H0424:1, H0544:1, H0383:1, L07/72:1,
				L0764:1, L0662:1, L0364:1, L0653:1, L0782:1, L0789:1, L0666:1, L0663:1, L0664:1, H0144:1, S0148:1,
				H0593:1, H0666:1, S0330:1, S0044:1, S0037:1, S3014:1, L0757:1, S0031:1, H0667:1 and H0S06:1.
273	HKIYH57	543510	283	AR235:4, AR176:4, AR170:3, AR161:3, AR162:3, AR163:3, AR169:3, AR164:3, AR217:3, AR261:3,
24				AR262:3, AR191:2, AR270:2, AR165:2, AR309:2, AR236:2, AR267:2, AR275:2, AR166:2, AR214:2,
				AR289:2. AR294:2. AR171:2, AR213:2, AR179:2, AR293:2, AR297:2, AR178:2, AR291:2, AR177:2,
				AR300.2, AR295:2, AR237:2, AR233:2, AR089:2, AR182:2, AR096:2, AR226:2, AR274:2, AR183:2,
				AR277.2 AR225:2. AR257:2. AR257:1, AR264:1, AR055:1, AR211:1, AR181:1, AR299:1, AR228:1,
•				AR188.1. AR296:1. AR190:1, AR234:1, AR277:1, AR316:1, AR287:1, AR216:1, AR185:1, AR231:1,
				AR240:1, AR196:1, AR286:1, AR238:1, AR193:1, AR060:1, AR230:1, AR104:1, AR255:1_L0777:3,
				1,0743;2, L0748;2, L0749;2, L0752;2, L0731;2, H0441;1, L0764;1, L0794;1, L0659;1, L0636;1, L0791;1,
				1.0663:1. H0144:1. S0374:1. H0658:1, L0744:1, L0751:1, L0779:1 and L0758:1.
77.7	UKINDAO	580845	284	AR173.7. AR162.7. AR161:7. AR163:7, AR165:6, AR164:6, AR166:6, AR235:6, AR175:5, AR274:5,
t 7	O+ 111 WIII	2500		AR213-5, AR257:5, AR191:5, AR196:4, AR270:4, AR285:4, AR269:4, AR252:4, AR258:4, AR247:4,
				AR200.4, AR183:4, AR245:4, AR262:4, AR199:4, AR275:4, AR179:4, AR217:4, AR178:4, AR312:4,
				AR293:4, AR174:4, AR182:3, AR180:3, AR219:3, AR264:3, AR229:3, AR239::3, AR233:3, AR177:3,
				AR277: 3. AR189:3. AR309:3, AR240:3, AR296:3, AR268:3, AR255:3, AR261:3, AR287:3, AR238:3,
				AR1883 AR25633, AR236;3, AR234;3, AR288;3, AR181;3, AR291;3, AR231;3, AR286;3, AR294;3,
				AR226:3, AR170:3, AR290:2, AR190:2, AR218:2, AR295:2, AR203:2, AR299:2, AR300:2, AR205:2,
				AR221:2, AR176:2, AR168:2, AR239:2, AR237:2, AR308:2, AR185:2, AR277:2, AR089:2, AR316:2,
				AR033.2, AR267:2, AR282:2, AR222:2, AR210:2, AR263:2, AR289:2, AR228:2, AR096:2, AR227:2,
				AR197:2, AR266:2, AR224:2, AR204:2, AR271:2, AR225:2, AR211:1, AR311:1, AR193:1, AR171:1,
				AR039:1, AR216:1, AR060:1, AR232:1, AR061:1, AR256:1, AR201:1 L0511:18, L0776:3, L0493:3,
				Н0659:3, L0779:3, Н0637:2, L0500:2, L0794:2, L0809:2, L0748:2, L0736:2, L0399:2, новаст, поозит,

				H0645:1, H0441:1, L0021:1, H0545:1, H0569:1, H0050:1, L0483:1, H0674:1, L0455:1, H0551:1, L0805:1,
275	HKMLK53	587269	1	AR201:1, AR309:5, AR1312:5, AR053:5, AR291:4, AR308:4, AR212:4, AR252:4, AR205:4, AR201:1, AR309:5, AR1312:5, AR263:5, AR291:4, AR223:3, AR205:4, AR223:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:4, AR275:3, AR285:3, AR313:3, AR245:3, AR291:3, AR297:2, AR165:2, AR162:2, AR297:2, AR162:2, AR283:2, AR285:2, AR161:2, AR286:2, AR166:2, AR283:2, AR285:2, AR287:2, AR286:2, AR163:2, AR288:2, AR286:2, AR193:2, AR285:2, AR196:2, AR273:2, AR38:1, AR285:1, AR39:1, AR295:1, AR295:1, AR285:1, AR285:1, AR295:1, AR295:1, AR285:1, AR285:1, AR295:1, AR295:1, AR295:1, AR285:1, AR295:1, AR295:1, AR285:1, AR285:1, AR295:1, AR295:1, AR285:1, AR285:1, AR285:1, AR285:1, AR285:1, AR295:1, AR295:1, AR285:1, AR2
276	HKMLP68	1037919	286	AR060:8, AR161:4, AR162:4, AR163:4, AR207:3, AR276:3, AR264:3, AR222:3, AR234:3, AR186:3, AR252:3, AR252:3, AR272:3, AR186:3, AR252:3, AR252:3, AR272:3, AR196:3, AR272:4, AR282:2, AR262:2, AR273:2, AR277:1, AR277:2, AR277:2, AR282:2, AR282:1, AR2
	HKMLP68	880047	737	
	HKMLP68	583524	738	
277	HL2AC08	610018	287	AR192:4, AR282:3, AR246:2, AR243:2, AR229:1, AR286:1, AR309:1, AR270:1, AR247:1, AR512:1, AR277:1, AR182:1, AR052:1, AR292:1 S0422:12, L0754:8, S0003:5, L0766:5, S0126:5, S0354:4, S0376:4, H0521:4, S0418:3, H0581:3, S0214:3, L0666:3, H0144:3, S0152:3, L0608:3, H0657:2, S0408:2, L3649:2, H0741:2, H0486:2, H0591:2, H0551:2, H0412:2, L0475:2, S0002:2, L0662:2, L0664:2, H0543:2, H0422:2, H0624:1, H0171:1, S0218:1, H0656:1, H0341:1, S0212:1, L0481:1, H0580:1, S0476:1, S0222:1, H0422:2, H0622:1, H0647:1, H0635:1, H0647:1, H0590:1, H0004:1, L0105:1, H0421:1, S0049:1, H0748:1, S038:1, H0646:1, S0344:1, S0426:1, H0529:1, L0369:1, L0394:1, L0764:1, L0803:1, L0376:1, L0375:1, L0805:1, L0663:1, L2263:1, L0269:1, H0542:1, H0652:1, H0652:1, H0672:1, H0642:1, H0542:1, H0652:1, H0678:1, S0436:1, L0375:1, L0803:1, L0779:1, S0436:1, L0362:1, H0667:1, H0542:1, H0652:1, R0652:1, R0646:1, H0678:1, R0632:1, H0652:1, H0667:1, H0654:1, H0652:1, H0652:1, H0652:1, H0667:1, H0654:1, H0667:1, H0667:1, H0654:1, H0667:1, H066
278	HL2AG57	695733	288	AR197:7, AR186:7, AR170:6, AR202:6, AR194:5, AR282:5, AR266:5, AR162:5, AR251:5, AR243:5, AR161:5, AR310:5, AR3

				AR053:4, AR265:4, AR273:4, AR269:4, AR052:4, AR178:4, AR164:4, AR312:4, AR308:4, AR296:4, AP176:4, AP208:4, AP206:4, AP2
				AR289;4, AR263:4, AR286:4, AR272:4, AR246:4, AR290:4, AR181:3, AR313:3, AR182:3, AR195:3,
				AR270:3, AR268:3, AR183:3, AR284:3, AR293:3, AR235:3, AR212:3, AR262:3, AR247:3, AR213:3,
				AR236:3, AR311:3, AR177:3, AR294:3, AR033:3, AR255:3, AR061:3, AR171:3, AR249:3, AR263:3,
				AR229:3, AR184:3, AR267:3, AR175:3, AR169:3, AR198:3, AR287:3, AR297:3, AR281:3, AR293:3,
				AR292:3, AR283:3, AR173:3, AR223:3, AR258:2, AR204:2, AR089:2, AR192:2, AR288:2, AR207:2,
				AR239.2, AR055.2, AR196.2, AR221.2, AR174:2, AR5001.2, AR220.2, AR230.2, AR330.2, AR337.3
				AR274:2, AR299:2, AR240:2, AR271:2, AR060:2, AR183:2, AR201:2, AR224:2, AR226:2, AR237:2,
				AR203:2, AR179:2, AR230:2, AR096:2, AR231:2, AR189:2, AR7/3:2, AR191:2, AR310:2, AR200:2, AR2
				AR106:2, AR221.2, AR230.2, AR232.2, AR241:1, AR216:1, AR210:1, AR219:1, AR218:1, AR280:1,
				AR211:1. AR314:1 H0359:2, L0768:2, H0341:1, S0212:1, H0687:1, H0264:1, H0131:1, L0640:1, L0637:1,
				L0764:1, L0805:1, L0659:1, L0647:1, L0665:1, H0520:1, H0519:1, H0689:1, L0439:1 and L0779:1.
279	HI CND09	1172046	289	AR282:1 L0741:5, L0751:4, L0777:4, S0007:3, H0575:3, L0747:3, L0592:3, S0212:2, H0545:2, H0266:2,
ì				L.0769;2, L.3904;2, L.5565;2, L.5566;2, L.0771;2, L.0768;2, L.0794;2, L.0789;2, L.2261;2, H0144;2, L.0352;2,
				F 3828:2, H0435:2, H0696:2, S0028:2, L0742:2, L0439:2, L0754:2, L0779:2, L0755:2, S0418:1, S0420:1,
				S0376.1, H0438.1, L3816.1, H0327.1, H0544.1, H0009.1, H0123.1, H0594.1, H0179.1, H0271.1, H0615.1,
				H0628:1, H0551:1, S0038:1, H0100:1, S0464:1, S0210:1, L0369:1, L3905:1, L0761:1, L0800:1, L0764:1,
				L0521:1, L0806:1, L0659:1, L0809:1, L0367:1, S0152:1, L0756:1, L0757:1, L0758:1 and S0436:1.
	HLCND09	1035153	739	
280	HLDBX13	815665	290	AR239.6, AR061.6, AR235.5, AR238.5, AR192.4, AR226.4, AR172.4, AR195.4, AR165.4, AR232.4,
				AR213:4, AR164:4, AR198:4, AR166:4, AR217:4, AR169:4, AR089:3, AR246:3, AR240:3, AR177:3,
				[AR233:3, AR162:3, AR274:3, AR212:3, AR161:3, AR176:3, AR204:3, AR237:3, AR207:3, AR215:3,
				AR283:3, AR266:3, AR275:3, AR225:3, AR264:3, AR311:3, AR227:3, AR313:3, AR182:3, AR205:3,
				AR221:3, AR234:3, AR261:3, AR308:3, AR231:3, AR250:3, AR193:3, AR282:3, AR222:3, AR193:2,
				JAR288:2, AR199:2, AR229:2, AR228:2, AR060:2, AR243:2, AR316:2, AR271:2, AR201:2, AR183:2,
				[AR277:2, AR247:2, AR312:2, AR175:2, AR191:2, AR183:2, AR245:2, AR236:2, AR033:2, AR190:2,
				AR300.2, AR189.2, AR291.2, AR096.2, AR223.2, AR262.2, AR299.2, AR174.2, AR285.2, AR257.2,
				AR196:2, AR286:2, AR181:2, AR211:2, AR272:2, AR216:2, AR203:2, AR287:1, AR289:1, AK270:1,
				AR293:1, AR224:1, AR295:1, AR297:1, AR104:1, AR163:1, AR254:1, AR255:1, AR055:1, AR269:1
_				H0509:1
281	HLDON23	636083	291	AR235:6, AR196:5, AR161:5, AR162:5, AR163:4, AR264:4, AR176:4, AR165:4, AR164:4, AR238:4, AR236:4, AR194:4 AR196:3, AR199:3, AR261:4, AR194:4, AR253:4, AR188:4, AR17:3, AR261:3, AR199:3,
				מינים ליים מינים מי

				AR252:3, AR178:3, AR288:3, AR247:3, AR033:3, AR182:3, AR286:3, AR190:3, AR296:3, AR170:3,
				AR269:3, AR262:3, AR200:3, AR242:3, AR255:3, AR183:3, AR295:3, AR297:3, AR242:3,
				AR285:3, AR312:3, AR287:3, AR268:3, AR189:3, AR257:3, AR282:3, AK291:3, AK175:3, AK309:3,
				AR270:3, AR171:3, AR180:3, AR299:3, AR293:2, AR217:2, AR222:2, AR179:2, AR277:2, AR271:2,
				AR229:2, AR272:2, AR174:2, AR240:2, AR225:2, AR243:2, AR173:2, AR308:2, AR228:2, AR289:2,
				AR203:2, AR239:2, AR254:2, AR226:2, AR213:2, AR213:2, AR104:2, AR258:2, AR290:2, AR227:2,
				AR294:2, AR267:2, AR234:2, AR096:2, AR169:2, AR237:2, AR210:2, AR211:2, AR311:2,
				AR218:2, AR219:2, AR172:2, AR275:2, AR039:2, AR060:2, AR316:2, AR211:2, AR300:2, AR230:2,
				AR185:2, AR061:1, AR089:1, AR216:1, AR212:1, AR193:1, AR260:1, AR201:1, AR232:1, AR055:1
				L0805:8, L0809:6, L0439:5, L0777:5, L0748:4, L0800:3, L0662:3, L0659:3, L0750:3, L0758:3, H0208:2,
				H0123:2, H0617:2, L0769:2, L0803:2, L0776:2, L0666:2, L0438:2, L0780:2, L0731:2, L3643:1, H0741:1,
				H0497:1, L0622:1, T0109:1, H0581:1, L0738:1, H0546:1, H0024:1, T0010:1, H0510:1, H0428:1, H0622:1,
				H0673:1, H0598:1, S0036:1, H0163:1, H0413:1, L0370:1, T0041:1, L0637:1, L5566:1, L0667:1, L0772:1,
				1.0646:1. L0764:1. L0794:1. L0766:1. L0649:1. L0657:1. L0788:1. L0663:1. S0374:1. H0666:1. S0330:1.
				H0539:1, H0521:1, H0696:1, H0478:1, L0741:1, L0751:1, L0745:1, L0747:1, L0749:1 and L0752:1.
282	HLDOW79	847396	292	<u>AR252.214, AR264:119, AR250:104, AR254:94, AR311:91, AR194:85, AR308:83, AR202:81, AR195:78, </u>
}		3	ì	AR263:76. AR212:76. AR281:73. AR272:72, AR246:59, AR309:54. AR053:51, AR206:51, AR245:50,
				AR315:50, AR253:49, AR197:48, AR213:46, AR244:45, AR193:45, AR222:45, AR241:44, AR243:43,
				AR312:40, AR223:40, AR314:40, AR280:40, AR265:39, AR201:39, AR224:38, AR271:37, AR198:37,
				AR205:35, AR273:35, AR221:34, AR214:34, AR207:34, AR192:34, AR200:31, AR210:31, AR096:31,
				AR310:30, AR033:30, AR169:29, AR174:29, AR274:29, AR219:28, AR240:28, AR251:28, AR164:27,
				AR218:26, AR299:26, AR242:26, AR204:26, AR165:25, AR189:25, AR247:24, AR172:24, AR225:24,
				AR211:24, AR166:24, AR232:24, AR235:24, AR313:23, AR188:23, AR283:23, AR177:23, AR191:23,
				AR171:23, AR161:23, AR199:22, AR168:22, AR173:22, AR300:22, AR052:22, AR295:22, AR275:22,
	-			AR282:21, AR039:21, AR217:21, AR162:21, AR163:21, AR196:21, AR288:20, AR216:20, AR178:20,
				AR261:20, AR181:19, AR316:19, AR190:18, AR234:18, AR215:18, AR089:18, AR277:18, AR185:18,
				AR175:18, AR183:18, AR180:18, AR229:17, AR231:17, AR203:17, AR170:17, AR292:17, AR268:17,
				AR237:16, AR238:16, AR297:16, AR269:15, AR226:15, AR236:15, AR266:15, AR104:15, AR176:15,
				AR290:14, AR055:14, AR267:14, AR270:14, AR256:14, AR227:14, AR285:14, AR257:13, AR258:13,
_				AR186:13. AR287:13. AR239:13, AR061:13, AR255:13, AR296:13, AR293:13, AR179:12, AR286:12,
				AR291:12, AR262:11, AR230:11, AR260:11, AR060:11, AR294:11, AR289:11, AR182:10, AR248:10,
				AR284:9, AR233:9, AR259:9, AR249:8, AR228:6, AR298:5, AR184:4 L0758:6, L0803:3, L0748:3, L0749:2,
				H0722:1, H0632:1, H0042:1, H0510:1, S0438:1, L0646:1, L0806:1, L0776:1, L0787:1 and L0777:1.
283	HLDQC46	847397	293	AR266:19, AR261:17, AR291:17, AR238:15, AR235:15, AR283:13, AR289:13, AR297:12, AR039:12,

13:10, AR061:10, AR253:10, AR185:9, AR242:9, AR217:9, RR256:8, AR282:8, AR220:8, RR270:7, AR192:7, AR213:7, RR179:7, AR227:7, AR316:7, RR193:6, AR232:6, AR236:6, AR2	R2124, AR03.1, AR13.24, R2144, AR2164, AR312.4, R171:2, AR168:2 H0253:5, 1:1, H0484:1, H0192:1, S0360:1, 4:1, H0545:1, H0086:1, H0069:1, 8:1, H0606:1, H0135:1, H0063:1, :1, L0438:1, H0672:1, H0539:1,	R242:7, AR197:6, AR176:6, R257:4, AR261:4, AR170:4, R297:4, AR228:4, AR168:3, R199:3, AR180:3, AR214:3, R287:3, AR286:3, AR196:3, R270:3, AR217:3, AR185:3, R270:3, AR217:3, AR182:3, R293:2, AR204:2, AR179:2, R246:2, AR185:2, AR216:2, R246:2, AR213:2, AR260:2, R104:1, AR294:1, AR055:1, L0748:7, H0013:3, S0010:3, 8:2, H0510:2, S0003:1, H0675:1, 14:1, S0022:1, H0031:1, H0553:1,
AR055:11, AR250:11, AR183:11, AR197:10, AR195:10, AR165:10, AR243:10, AR061:10, AR253:10, AR164:10, AR089:9, AR166:9, AR255:9, AR176:9, AR174:9, AR239:9, AR185:9, AR242:9, AR177:9, AR285:9, AR175:8, AR296:8, AR295:8, AR295:8, AR295:8, AR295:8, AR296:8, AR296:7, AR268:7, AR268:7, AR181:7, AR246:7, AR247:7, AR297:7, AR293:6, AR293:6, AR297:6, AR294:6, AR293:6, AR193:6, AR296:6, AR296:6, AR296:6, AR293:5, AR296:5, AR	AR299:5, AR294:4, AR225:4, AR300:4, AR196:4, AR203:4, AR230:4, AR214:4, AR215:4, AR312:4, AR199:4, AR311:4, AR313:4, AR217:4, AR200:4, AR230:4, AR214:4, AR216:4, AR311:4, AR313:4, AR213:4, AR213:4, AR216:4, AR216:4, AR311:4, AR308:3, AR169:3, AR224:3, AR260:2, AR171:2, AR168:2 H0253:5, L0758:3, S0444:2, H0333:2, H0510:2, L3905:2, L0783:2, S0406:2, L0744:2, L0754:2, L0747:2, L0749:2, S0436:2, H0423:2, H0422:2, H0265:1, H0717:1, H0716:1, S6024:1, H0341:1, H0484:1, H0192:1, S0360:1, S0408:1, T0008:1, H0580:1, H0733:1, H033:1, S0280:1, H0188:1, H0248:1, H0648:1, H0666:1, H0135:1, H0063:1, H0487:1, S0440:1, L0768:1, L0866:1, L0653:1, L0791:1, L0666:1, L2261:1, L0438:1, H0672:1, H0539:1, R0301:1, L0743:1, L0743:1, L0743:1, L0743:1, H0444:1, and H0677:1.	AR165:9, AR164:9, AR166:8, AR165:8, AR161:8, AR195:7, AR242:7, AR197:6, AR176:6, AR165:9, AR164:9, AR162:8, AR266:3, AR265:5, AR239:5, AR239:5, AR257:4, AR261:4, AR170:4, AR193:4, AR252:4, AR282:4, AR261:4, AR308:4, AR212:4, AR239:5, AR257:4, AR228:4, AR168:3, AR193:4, AR252:4, AR266:3, AR255:3, AR265:3, AR266:3, AR214:3, AR230:3, AR173:3, AR266:3, AR266:3, AR255:3, AR266:3, AR266:2, AR266:1, AR066:2, AR266:1, AR066:1, AR066:1, AR066:1, H006:2, H006:1, H0065:1, H0065:1, H0065:1, H0065:1, H0065:1, H0065:1, H0066:1, H0066
AR055:11, AI AR164:10, AI AR285:9, AR AR257:8, AR AR205:7, AR AR201:6, AR AR274:6, AR	AR299:5, AR AR189:4, AR AR213:4, AR L0758:3, S04 S0436:2, H04 S0408:1, T00 H0123:1, H00 H0487:1, S04 S3014:1, 100	AR165:9, AR AR207:6, AR AR193:4, AR AR230:3, AR AR236:3, AR AR236:3, AR AR238:3, AR AR240:2, AR AR240:2, AR AR260:2, AB AR271:1, AF AR271:1, AF AR271:1, AF
		753742
	, , ,	HLDQR62
		284

				H0212:1, H0038:1, H0380:1, H0264:1, H0100:1, H0509:1, S0144:1, L0763:1, L0372:1, L0374:1, L0803:1, L0775:1, L0776:1, L0809:1, S0216:1, L2260:1, L0710:1, L2261:1, L2654:1, S0148:1, L3831:1, H0670:1, L0730:1, H064:1, S0146:1, S014
285	нгропля	740755	295	AR253:8, AR171:7, AR245:6, AR243:5, AR183:5, AR263:5, AR264:4, AR250:4, AR269:4, AR060:4, AR180:4, AR309:4, AR162:4, AR161:4, AR165:4, AR165:4, AR192:4, AR176:4, AR164:4, AR180:4, AR270:4, AR309:4, AR162:4, AR161:4, AR165:4, AR165:3, AR270:3, AR282:3, AR312:3, AR246:3, AR178:3, AR181:3, AR213:4, AR195:4, AR271:4, AR166:3, AR270:3, AR240:3, AR281:3, AR312:3, AR246:3, AR181:3, AR181:3, AR181:3, AR181:3, AR181:3, AR181:3, AR281:3, AR282:3, AR282:3, AR292:3, AR292:2, AR306:2, AR306:2, AR292:2, AR316:2, AR294:2, AR230:2, AR264:2, AR292:2, AR390:2, AR292:2, AR396:2, AR294:2, AR294:2, AR292:2, AR290:2, AR292:2, AR191:2, AR294:2, AR292:2, AR290:2, AR292:2, AR191:3, AR292:2, AR296:2, AR292:2, AR296:2, AR292:2, AR292:2, AR292:2, AR296:2, AR292:2, AR292:1, H0050:2, L0740:2, L0740:1, H0052:1, H00
286	HLDRM43	846330	296	AR060:31, AR185:19, AR055:19, AR283:17, AR299:16, AR282:14, AR104:11, AR089:10, AR316:9, AR277:9, AR300:8, AR096:6, AR240:6, AR039:5, AR219:5, AR313:4, AR218:3 S0410:26, S0444:6, S0358:4, S0440:4, L0748:4, H0661:3, S0442:3, S0408:3, H0393:3, H0574:3, S0438:3, H0509:3, S0406:3, S0360:2, H0510:2, L0764:2, S0374:2, H0742:1, H0730:1, H0722:1, H0331:1, H0204:1, H0150:1, H0615:1, H0059:1, L0772:1, L0648:1, L0803:1, L0774:1 and L0791:1.
	HLDRM43	638939	740	
287	HLDRP33	647430	297	AR241:11, AR184:11, AR196:11, AR242:9, AR165:9, AR164:9, AR166:8, AR161:8, AR162:8, AR163:8, AR313:8, AR313:8, AR173:8, AR229:7, AR192:6, AR199:6, AR180:6, AR262:6, AR298:6, AR203:5, AR265:5, AR264:5, AR247:5, AR238:5, AR191:5, AR181:5, AR250:5, AR178:5, AR269:4, AR200:4, AR257:5, AR175:5, AR177:5, AR293:5, AR299:5, AR258:5, AR182:5, AR269:4, AR200:4,

				AR1089:4, AR292:4, AR176:4, AR226:4, AR174:4, AR206:4, AR297:4, AR193:4, AR189:4, AR296:4, AR171:4, AR312:4, AR213:4, AR204:4, AR197:4, AR300:4, AR203:4, AR234:4, AR270:4, AR171:4, AR312:4, AR195:4, AR204:4, AR204:4, AR248:4, AR206:3, AR228:3, AR234:3, AR236:3, AR315:3, AR308:3, AR308:3, AR316:3, AR296:3, AR296:3, AR296:3, AR296:3, AR288:3, AR288:3, AR388:3, AR388:3, AR388:3, AR388:3, AR298:3, AR288:3, AR
288	ИГ.НГР03	460467	298	AR194:6, AR186:6, AR169:6, AR170:5, AR202:5, AR060:5, AR184:5, AR176:5, AR273:4, AR294:6, AR248:4, AR223:4, AR161:4, AR055:4, AR162:4, AR251:4, AR163:4, AR061:4, AR282:4, AR248:4, AR223:4, AR161:4, AR055:4, AR162:4, AR253:3, AR253:3, AR183:3, AR269:3, AR182:3, AR244:4, AR052:4, AR300:4, AR267:4, AR257:3, AR270:3, AR104:3, AR269:3, AR298:3, AR298:3, AR204:3, AR266:3, AR246:3, AR271:3, AR277:3, AR270:3, AR290:3, AR265:3, AR267:3, AR277:3, AR289:3, AR296:3, AR297:3, AR289:3, AR290:2, AR181:3, AR288:3, AR288:3, AR297:2, AR289:3, AR297:2, AR288:3, AR2
289	HLHFR58	919888	299	AR299:13, AR242:8, AR192:7, AR176:7, AR300:6, AR246:6, AR180:6, AR204:0, AR035:0, AR305:0, AR295:13, AR292:13, AR192:7, AR192:7, AR170:5, AR207:6, AR282:5, AR282:5, AR208:5, AR208:5, AR181:5, AR245:5, AR247:5, AR267:5, AR171:5, AR171:5, AR171:5, AR207:5, AR274:5, AR247:5, AR267:5, AR177:5, AR272:4, AR274:5, AR198:4, AR197:4, AR272:4, AR272:4, AR274:5, AR198:4, AR237:4, AR272:4, AR272:3, AR272:3, AR292:4, AR292:4, AR292:4, AR292:3, AR292:2,

	ILJBJ61 ILJBJ61 ILMBO76	1019012 833665 626831	302	AR266:16, AR033:16, AR188:16, AR269:14, AR269:14, AR173:14, AR162:13, AR173:14, AR193:14, AR193:14, AR193:14, AR193:16, AR269:13, AR273:13, AR273:14, AR273:
1 16	292 H	HLJBJ61 HLJBJ61 HLJBJ61 93 HLMBO76	HLJBJ61 HLJBJ61 HLMBO76	HLJBJ61 1019012 3 HLJBJ61 833665 HLMBO76 626831

				/AR239:2, AR033:2, AR190:2, AR193:2, AR293:2, AR233:2, AR171:2, AR291:2, AR286:2, AR174:2,
				AR104:2, AR231:2, AR300:2, AR295:2, AR195:2, AR234:2, AR089:2, AR247:2, AR222:2, AR221:2,
				AR060:2, AR311:2, AR211:1, AR096:1, AR201:1, AR232:1, AR205:1, AR218:1, AR260:1, AR219:1,
				AR039:1, AR212:1, AR256:1, AR185:1, AR277:1, AR061:1 L0439:6, S0410:3, L0794:2, H0255:1, H0163:1,
				H0745:1, L0796:1, L0662:1, L0766:1, L0776:1, L0666:1, L0438:1, L0352:1, H0659:1, H0521:1 and L0755:1.
294	HLMCA59	519349	304	AR252:376, AR254:166, AR253:137, AR250:128, AR096:109, AR213:80, AR245:76, AR246:74, AR212:71,
				JAR240:67, AR290:62, AR275:57, AR039:57, AR180:52, AR313:49, AR189:45, AR188:42, AR199:42,
				AR173:39, AR205:38, AR267:37, AR179:37, AR263:36, AR183:35, AR243:35, AR270:35, AR274:35,
				AR268:35, AR216:34, AR190:34, AR053:34, AR242:34, AR247:32, AR174:32, AR272:31, AR165:30,
				AR223:29, AR269:29, AR316:29, AR164:28, AR161:28, AR166:28, AR214:27, AR163:27, AR264:27,
				AR162:26, AR200:26, AR193:26, AR089:26, AR201:25, AR218:25, AR198:25, AR192:23, AR175:23,
				AR312:23, AR217:23, AR224:23, AR191:22, AR308:22, AR178:22, AR300:22, AR225:22, AR215:21,
				AR171:21, AR299:21, AR236:21, AR185:21, AR222:21, AR181:21, AR262:20, AR168:19, AR282:19,
				AR221:19, AR203:19, AR176:19, AR210:18, AR293:18, AR170:18, AR258:18, AR172:18, AR219:18,
				AR271:17, AR195:17, AR182:17, AR255:17, AR288:17, AR177:17, AR060:16, AR196:16, AR169:16,
				AR285:16, AR309:16, AR297:15, AR311:15, AR257:15, AR260:15, AR197:15, AR291:14, AR229:14,
				AR296:14, AR234:14, AR230:14, AR261:13, AR266:13, AR295:12, AR287:11, AR294:11, AR277:11,
				AR238:11, AR104:10, AR211:10, AR231:10, AR226:10, AR256:9, AR286:9, AR204:9, AR237:9, AR289:9,
				AR233:9, AR283:9, AR235:8, AR228:8, AR239:7, AR033:7, AR055:7, AR232:7, AR061:7, AR207:5,
				AR227:5 H0254:1
295	HLQBE09	520375	305	AR198:7, AR207:7, AR235:7, AR163:7, AR161:7, AR162:7, AR228:6, AR169:6, AR250:6, AR233:5,
	ı			AR176:5, AR269:5, AR214:5, AR236:5, AR229:5, AR182:5, AR181:5, AR053:5, AR197:5, AR231:5,
				JAR201:5, AR268:4, AR257:4, AR178:4, AR267:4, AR177:4, AR239:4, AR288:4, AR224:4, AR252:4,
				AR191:4, AR266:4, AR261:4, AR274:4, AR243:4, AR204:4, AR271:4, AR192:4, AR294:4, AR165:4,
				[AR255:4, AR175:4, AR262:4, AR183:4, AR234:4, AR205:4, AR179:4, AR275:4, AR166:4, AR164:3,
				[AR230:3, AR238:3, AR196:3, AR296:3, AR287:3, AR173:3, AR293:3, AR180:3, AR270:3, AR237:3,
				[AR285:3, AR200:3, AR174:3, AR190:3, AR168:3, AR286:3, AR291:3, AR253:3, AR213:3, AR297:3,
				AR061:3, AR225:3, AR223:3, AR033:3, AR295:3, AR193:3, AR260:3, AR300:3, AR171:3, AR290:3,
				[AR216:3, AR247:3, AR185:3, AR289:3, AR203:2, AR055:2, AR227:2, AR232:2, AR089:2, AR240:2,
				AR299.2, AR311.2, AR188.2, AR222.2, AR226.2, AR277.2, AR282.2, AR060.2, AR309.2, AR258.2,
				AR172:2, AR313:2, AR264:2, AR039:2, AR246:2, AR272:2, AR189:2, AR195:2, AR283:2, AR212:2,
				AR316:2, AR312:2, AR256:2, AR215:2, AR199:1, AR211:1, AR210:1, AR096:1, AR170:1, AR245:1,
				AR219:1 H0331:1 and L0758:1.

	AR237:8, AR238:7, AR232:7, AR229:6, AR209:5, AR228:3, AR282:4, AR254:4, AR220:3, AR230:3, AR233:3, AR224:3, AR266:3, AR161:3, AR163:3, AR223:3, AR215:2, AR061:2, AR166:2, AR192:2, AR309:2, AR180:2, AR239:2, AR274:2, AR176:2, AR162:2, AR172:2, AR264:2, AR267:2, AR267:2, AR266:2, AR296:2, AR296:2, AR277:2, AR177:2, AR269:2, AR165:2, AR247:2, AR164:2, AR268:1, AR236:1, AR235:1, AR235:1, AR235:1, AR235:1, AR235:1, AR235:1, AR29:1, AR295:1, AR295:2, H0574:2, H0742:1 and H0730:1.	745
		619979
	HLQDR48	HLQDR48
296	297	

298	нгоем64	1352374	308	AR186:8, AR202:6, AR206:5, AR244:5, AR263:5, AR184:5, AR251:5, AR241:4, AR310:4, AR061:4, AR065:4, AR202:4, AR204:3, AR204:3, AR182:3, AR231:3, AR298:3, AR213:3, AR312:3,
				AR250:3, AR248:3, AR246:3, AR291:3, AR269:3, AR213:3, AR267:3, AR214:2, AR289:2, AR292:2,
				AR299:2, AR266:2, AR033:2, AR183:2, AR277:2, AR053:2, AR247:2, AR205:2, AR296:2, AR221:2,
				AR309:2, AR222:2, AR178:2, AR232:2, AR290:2, AR259:2, AR000:2, AR256:2, AR515:2, AR253:2, AR269:3, AR268:2, AR2
			-	AK294:2, AK300:2, AK224:2, AK203:2, AK200:2, AK100:2, AK270:2, AK005:2; AK200:2; AK205:3; AK105:3, AK105:3, AK105:1, AK1
				AR096.1, AR308:1, AR233:1, AR316:1, AR164:1, AR256:1, AR165:1, AR257:1, AR218:1, AR271:1,
				AR171:1, AR177:1, AR179:1, AR173:1 L0794:14, L0749:5, L0777:5, L0752:5, S0434:5, L0764:4, L0809:4,
				H0046:3, L0770:3, L0803:3, L3825:3, L0747:3, H0331:2, H0574:2, L0789:2, S0328:2, L0779:2, L0595:2,
	-			\$0040:1, \$0212:1, \$0045:1, \$0476:1, H0393:1, L3388:1, H0369:1, H0370:1, H0632:1, H0581:1, H0052:1,
				20388;1, H0210;1, L0194;1, H0210;1, H0220;1, H0440;1, H0440;1, L0470;1, H0740;1, H07
				L0645:1, L0763:1, L0864:1, L0773:1, L0036:1, L0039:1, L0763:1, L0763:1, L0060:1, L0060:1, L0764:1, L0754:1 and S0192:1.
	HLQEM64	897823	746	
299	HLTAU74	853614	309	AR256:612, AR258:511, AR260:474, AR286:465, AR289:369, AR283:344, AR196:312, AR211:292,
				AR053:273, AR219:265, AR294:255, AR264:255, AR309:253, AR263:248, AR308:231, AR257:231,
				AR293:228, AR262:219, AR266:214, AR218:201, AR245:194, AR246:189, AR243:184, AR312:176,
				AR197:166, AR210:164, AR287:161, AR297:159, AR255:155, AR172:152, AR205:150, AR195:147,
				JAR213:146, AR288:142, AR212:139, AR247:136, AR236:136, AR223:129, AR222:121, AR271:119,
				AR272:119, AR291:116, AR269:116, AR207:116, AR188:116, AR313:114, AR240:114, AR311:113,
				AR180:113, AR316:112, AR200:110, AR253:110, AR178:107, AR176:102, AR169:101, AR177:99,
				AR189:97, AR096:96, AR193:93, AR268:93, AR275:93, AR270:92, AR290:92, AR039:92, AR191:91,
				[AR179:91, AR274:91, AR199:90, AR168:89, AR198:88, AR170:88, AR171:86, AR183:83, AR225:82,
				AR181:81, AR190:80, AR192:78, AR250:76, AR224:76, AR242:75, AR261:75, AR201:73, AR267:72,
				JAR175:72, AR285:70, AR182:69, AR204:67, AR282:66, AR089:65, AR221:64, AR174:63, AR300:62,
				JAR235;57, AR055;57, AR254:57, AR165:57, AR173:56, AR299:55, AR231:54, AR033:54, AR164:53,
				JAR162:52, AR166:52, AR234:51, AR161:49, AR203:48, AR163:47, AR296:45, AR104:45, AR295:42,
				AR237:42, AR185:38, AR060:37, AR229:35, AR232:34, AR217:28, AR230:28, AR214:23, AR277:22,
				[AR238:22, AR061:21, AR226:20, AR216:20, AR239:19, AR233:18, AR252:15, AR228:13, AR227:10,
				AR215:10 S0040:2, L0777:2, H0170:1, S0212:1, H0270:1, T0040:1, H0090:1, S0038:1, H0100:1, L0655:1,
				L0664:1, H0658:1, H0478:1, L0751:1, S0260:1 and H0445:1.
300	HLTC033	778074	310	AR313:70, AR165:59, AR193:55, AR089:53, AR195:52, AR166:52, AR162:52, AR164:51, AR163:50,
				AR212:49, AR299:48, AR229:47, AR161:47, AR053:45, AR096:43, AR264:42, AR173:40, AR312:40,

				AR300:38, AR247:37, AR196:37, AR183:37, AR240:36, AR213:35, AR308:34, AR258:33, AR293:33, AR300:39, AR175:31, AR178:31, AR263:31, AR174:29, AR199:29, AR309:29, AR252:29,
				AR177:28, AR253:27, AR257:27, AR226:27, AR282:27, AR275:27, AR179:27, AR234:27, AR218:27,
	<u></u>	-		AR181:27, AR316:26, AR270:26, AR286:26, AR285:26, AR236:25, AR277:25, AR060:25, AR286:23, AR182:22,
				AR254:24, AR262:24, AR2/1:24, ARZ/4:23, ARZ09:23, ARZ09:23, AR236:21, AR200:20, AR230:20,
			- 	AK253:22, AK230:22, AK213:22, AK213:22, AK283:19, AK104:19, AK288:18, AK223:18, AK191:18, AR191:18,
				AR176: 18. AR188:17. AR214:17, AR225:17, AR294:16, AR287:16, AR231:16, AR291:15, AR169:15,
				AR239:15, AR267:15, AR272:14, AR224:14, AR260:14, AR255:13, AR227:13, AR228:13, AR266:13,
				AR222:13, AR290:13, AR211:12, AR168:12, AR289:11, AR256:11, AR210:11, AR217:11, AR1/0:11,
				4R171:11, AR221:11, AR246:11, AR205:10, AR190:10, AR216:9, AR1/2:9, AR205:-7,
				AR245:8, AR198:7, AR204:7, AR243:7, AR201:7, AR207:7, AR061:7, AR215:1, AR039:1, AR242:0,
;	03/14/10/14	10000	21.1	ARI9/13 L0396.2, H0001.11, H0453.1, H0570.11, H0570.11, H0571.5, ARI80.6, ARI78.5, AR271.5, AR183.5,
301	HLIDVSU	167076	311	AR226.4, AR102.1, AR1102.1, AR1102.1, AR1102.1, AR26.4, AR226.4, AR276.4, AR289.4,
				ARIO13, AR103.3, AR103.3, AR103.3, AR174.4, AR201.4, AR207.4, AR243.4, AR257.4, AR270.4,
				AP 2004 AP 272-4, AR 169:3, AR 193:3, AR 246:3, AR 177:3, AR 233:3, AR 169:3, AR 240:3,
				AP267-3, AP283-3, AR238-3, AR173-3, AR300-3, AR237-3, AR175-3, AR247-3, AR261-3, AR245-3,
				AR191:3, AR280:3, AR096:3, AR061:3, AR225:3, AR191:3, AR316:3, AR230:3, AR289:3, AR185:3,
				AR262:3, AR179:3, AR210:3, AR231:3, AR255:3, AR277:3, AR227:3, AR204:2, AR196:2, AR168:2,
				AR291-2, AR291-2, AR190-2, AR299-2, AR218-2, AR236-2, AR221-2, AR290-2, AR033-2, AR296-2,
				AR282.2, AR286.2, AR188.2, AR263.2, AR297.2, AR234.2, AR312.2, AR216.2, AR232.2, AR055.2,
				AR264.2, AR285.2, AR200.2, AR294.2, AR313.2, AR287.2, AR203.2, AR172.2, AR311.2, AR211.2,
				AR295:2, AR195:2, AR213:2, AR258:2, AR171:1, AR308:1, AR219:1, AR199:1, AR198:1, AR224:1,
				AR192:1, AR222:1, AR223:1, AR104:1 L0763:3, H0090:2, H0556:1, H0485:1, H0063:1, H0649:1, L0633:1
				and H0422:1.
302	HI TEI06	543017	312	<u>AR055:6, AR183:5, AR309:5, AR060:5, AR104:5, AR162:4, AR161:4, AR163:4, AR183:4, AR1802:4, AR18</u>
3				AR274:4, AR164:4, AR225:4, AR266:3, AR252:3, AR166:3, AR178:3, AR229:3, AK182:3, AK299:3,
				AR261:3, AR089:3, AR240:3, AR283:3, AR264:3, AR257:3, AR242:3, AR177:3, AR268:3, AR268:3,
				AR238:3, AR239:3, AR269:3, AR272:3, AR275:3, AR267:2, AR215:2, AR39:2, AK300:2, AK301:2,
				AR255:2, AR176:2, AR316:2, AR313:2, AR181:2, AR185:2, AR231:2, AR233:2, AR096:2, AK226:2,
				AR247.2, AR172.2, AR061.2, AR216.2, AR271.2, AR234.2, AR169.2, AR312.2, AK270.2, AK200.2,
				AR033:2, AR205:2, AR170:1, AR227:1, AR308:1, AR190:1, AR198:1, AR311:1, AK108:1, AK250:1,
				AR246.1, AR179:1, AR179:1, AR189:1, AR290:1, AR200:1, AR210:1, AR210:1, AR210:1, AR179:1, AR1

				AR236:1. AR219:1. AR232:1. AR218:1. AR293:1. AR175:1. AR174:1 L0769:3, L0777:3, S0422:2, L0803:2,
				L0775:2, H0547:2, S0408:1, S0278:1, H0090:1, L0766:1, L0774:1, L0515:1, H0519:1, L0748:1, L0749:1, H075:1, L0759:1 and L0592:1.
303	HLTFA64	638242	313	AR242:10, AR039:7, AR192:7, AR313:7, AR165:7, AR166:6, AR164:6, AR089:6, AR204:6, AR161:6,
				AR162:6, AR196:5, AR163:5, AR096:5, AR215:5, AR053:5, AR060:5, AR191:5, AR104:5, AR055:5,
				AR172:4, AR240:4, AR299:4, AR213:4, AR265:4, AR212:4, AR182:4, AR274:4, AR201:4, AR300:4,
				AR243:4, AR193:4, AR316:4, AR170:4, AR275:4, AR277:4, AR198:4, AR199:4, AR181:3, AR178:3,
				AR262:3, AR289:3, AR177:3, AR296:3, AR175:3, AR247:3, AR236:3, AR185:3, AR245:3, AR179:3,
				AR269:3, AR285:3, AR200:3, AR173:3, AR294:3, AR288:3, AR197:3, AR229:3, AR312:3, AR253:3,
				[AR176:3, AR228:3, AR174:3, AR293:3, AR238:3, AR257:3, AR261:3, AR254:3, AR190:3, AR291:3,
				AR264:3, AR237:3, AR189:3, AR271:3, AR231:3, AR233:2, AR283:2, AR295:2, AR216:2, AR234:2,
				AR267:2, AR203:2, AR033:2, AR207:2, AR205:2, AR188:2, AR290:2, AR308:2, AR282:2, AR266:2,
				AR268:2, AR309:2, AR239:2, AR183:2, AR297:2, AR226:2, AR195:2, AR225:2, AR246:2, AR232:2,
				AR272:2, AR286:2, AR270:2, AR224:2, AR218:2, AR252:1, AR258:1, AR311:1, AR210:1, AR260:1,
				AR287:1, AR256:1, AR061:1, AR222:1, AR180:1, AR219:1, AR255:1, AR171:1 L0748:5,
				H0622:3, L0659:3, H0670:3, S0408:2, H0606:2, L0646:2, L0771:2, L0774:2, L0666:2, L0749:2, H0295:1,
				H0484:1, S0358:1, S0410:1, H0730:1, L3281:1, H0549:1, H0250:1, H0581:1, H0057:1, H0510:1, H0090:1,
				L0770:1, L0639:1, L0372:1, L0643:1, L0374:1, L0648:1, L0521:1, L0662:1, L0794:1, L0649:1, L0560:1,
				L0806:1, L0805:1, L0527:1, L0657:1, L0783:1, L0383:1, L0790:1, L0665:1, L2257:1, S0378:1, L0602:1,
				S0406:1, S3014:1, L0756:1, L0777:1, L0755:1, L0596:1, L0485:1, L0601:1, S0424:1 and H0352:1.
38	HLTHG37	787530	314	AR161:12, AR162:12, AR163:11, AR290:10, AR269:9, AR176:8, AR241:7, AR254:7, AR268:7, AR252:7,
				AR180.7, AR267:7, AR235:7, AR182:7, AR270:7, AR172:6, AR165:6, AR190:6, AR164:6, AR173:6,
				AR236:6, AR249:6, AR166:6, AR218:6, AR183:6, AR275:6, AR181:6, AR228:6, AR250:6, AR215:6,
				AR178:6, AR174:5, AR251:5, AR191:5, AR293:5, AR193:5, AR189:5, AR231:5, AR186:5, AR263:5,
				AR310:5, AR210:5, AR188:5, AR274:5, AR224:5, AR175:5, AR238:5, AR171:5, AR239:5, AR253:5,
				AR299:5, AR246:5, AR233:5, AR255:5, AR244:5, AR205:5, AR261:4, AR272:4, AR262:4, AR206:4,
				AR219:4, AR264:4, AR089:4, AR198:4, AR288:4, AR257:4, AR271:4, AR168:4, AR053:4, AR311:4,
				AR312:4, AR289:4, AR201:4, AR291:4, AR284:4, AR216:4, AR243:4, AR177:4, AR248:4, AR196:4,
				AR282:4, AR200:4, AR199:4, AR223:4, AR195:4, AR226:4, AR229:4, AR203:4, AR237:4, AR313:4,
				AR192:4, AR104:4, AR294:4, AR273:4, AR297:4, AR207:4, AR298:4, AR295:4, AR169:3, AR217:3,
				[AR287:3, AR266:3, AR222:3, AR184:3, AR052:3, AR240:3, AR061:3, AR033:3, AR179:3, AR265:3,
				AR300:3, AR242:3, AR232:3, AR213:3, AR234:3, AR230:3, AR286:3, AR316:3, AR285:3, AR185:3,
	-			AR060:3, AR309:3, AR096:3, AR277:3, AR280:3, AR197:3, AR260:3, AR296:3, AR204:3, AR258:3,
				AR227:3, AR292:3, AR247:3, AR211:2, AR214:2, AR212:2, AR039:2, AR055:2, AR256:2, AR308:2,

		·		AR225:2, AR170:2, AR281:2, AR259:2, AR314:1, AR315:1 L0439:6, L0749:4, H0144:3, L0438:3, L0748:3, and an an an an an an an an an an an an an
				50282:1, 50035:1, 50358:1, 50376:1, 50360:1, H0580:1, 50046:1, H0351:1, 50222:1, H0438:1, H0586:1,
				H0587:1, H0486:1, L0021:1, H0570:1, S0003:1, H0328:1, H0428:1, T0023:1, H0628:1, H0032:1, H04040:1, H0040:1, H0047:1, H00413:1, H0413:1, H0413:1, S0210:1, L0662:1, L0803:1, L0606:1, L0659:1, L0789:1, L0663:1, H0413:1, H0423:1, H0443:1, H0445:1, H04443:1, H0445:1, H0445:1, H0445:1, H0445:1, H0445:1, H0445:1, H0445:1, H0445:1, H0445:1,
				\$0428:1, H0689:1, H0435:1, S0380:1, H0555:1, L0745:1, L0747:1, L0750:1, L0779:1, L0758:1, L0759:1,
				S0260:1, L0608:1 and S0412:1.
	HLTHG37	743169	747	COOK! BUTCH! BOOK!
305	HLWAA17	629552	315	AR273:12, AR184:12, AR248:11, AR281:9, AR183:8, AR265:8, AR314:1, AR280:1, AK515:1, AK269:1,
				AR268:6, AR270:6, AR241:6, AR290:6, AR299:5, AR298:5, AR294:5, AR2/4:4, AR090:4,
				AR291:4, AR271:4, AR238:4, AR31:4, AR31:4, AR32:4, AR30:4, AR13:4, AR1
				AKZ19:4, AKZ26:4, AKZ19:4, AKZ10:4, AKZ19:4, AKZ10:4; AKZ01:4; AKZ
				AKZ18:4, AKZ22:4, AKZ823:4, AK103:4, AKZ03:4, AK103:2, AK172:3, AKZ720:1,
				AR242:3, AR039:3, AR311:3, AR284:3, AR252:3, AR089:9, AR173:3, AR250:3, AR250:3,
				AR213:3, AR161:3, AR061:3, AR234:3, AR245:3, AR247:3, AR227:3, AR185:3, AK216:3, AK229:3,
				[AR289:2, AR053:2, AR033:2, AR277:2, AR193:2, AR195:2, AR205:2, AR316:2, AR264:2, AK212:2,
				AR286:2, AR188:2, AR293:2, AR174:2, AR297:2, AR222:2, AR300:2, AR191:2, AR190:2, AR177:2,
				AR288:2, AR295:2, AR283:2, AR162:2, AR263:2, AR055:2, AR299:2, AR104:2, AR261:2, AR166:2,
				AR294:2, AR266:2, AR181:2, AR214:2, AR189:2, AR259:2, AR246:2, AR201:1, AR060:1, AR257:1,
				AR204:1, AR233:1, AR199:1, AR179:1, AR173:1, AR200:1, AR258:1, AR210:1, AR252:1, AR168:1,
				AR256:1, AR194:1, AR255:1, AR236:1 S0410:24, L0748:18, S0436:12, H0547:8, L0731:8, H0556:7,
				H0039;6, L0666;6, H0046;5, H0059;5, L0775;5, L0439;5, L0755;5, H0622;4, L0662;4, L0740;4, L0751;4,
				L0779;4, H0575;3, H0553;3, H0529;3, L0769;3, L0659;3, L5623;3, L0588;3, L0593;3, S0011;3, H0255;2,
				S0418:2, S0442:2, S0046:2, H0586:2, S0049:2, H0424:2, H0644:2, H0560:2, H0561:2, S0002:2, S0426:2,
				L0763;2, L0772;2, L0646;2, L0655;2, L0527;2, L0518;2, L0783;2, L0809;2, L0665;2, L0438;2, H0519;2,
				H0689:2, H0672:2, H0555:2, H0631:2, S0206:2, L0757:2, L0758:2, L0485:2, L0608:2, L0601:2, H0543:2,
				H0171:1, H0265:1, S0040:1, H0294:1, T0049:1, S0134:1, H0583:1, H0657:1, H0484:1, H0661:1, H0125:1,
				\$0420:1, \$0354:1, \$0358:1, \$0360:1, \$0408:1, H0580:1, H0742:1, \$0132:1, \$0476:1, H0550:1, H0431:1,
				H0592:1, H0587:1, H0333:1, H0270:1, H0013:1, H0599:1, T0082:1, H0318:1, H0251:1, T0110:1, H0545:1,
				H0150:1, H0041:1, H0620:1, H0024:1, H0057:1, H0014:1, S0051:1, H0083:1, S0024:1, H0355:1, H0266:1,
				H0271:1, H0188:1, S0250:1, H0328:1, H0615:1, L0483:1, H0030:1, H0031:1, H0111:1, H0032:1, H0383:1,
				H0674:1, H0211:1, L0456:1, H0068:1, H0135:1, H0040:1, H0634:1, H0551:1, H0412:1, S0450:1, H0647:1,
				H0646:1, S0144:1, S0142:1, S0344:1, S0210:1, L0761:1, L0372:1, L0764:1, L0767:1, L0768:1, L0649:1,
				L5574:1, L0375:1, L0651:1, L0784:1, L0654:1, L0807:1, L0515:1, L0588:1, L0383:1, L0663:1, L0664:1,

				S0006:1, H0520:1, H0593:1, H0682:1, H0684:1, H0658:1, H0670:1, H0696:1, S0406:1, S0027:1, L0754:1, L0747:1, L0750:1, L0752:1, S0434:1, L0591:1, L0603:1, S0106:1, H0668:1, H0542:1 and H0423:1.
306	HLWAD77	653513	316	AR263:12, AR219:10, AR269:10, AR184:10, AR089:10, AR290:9, AR218:9, AR238:9, AR291:9, AR282:9, AR241:8, AR296:8, AR266:8, AR268:8, AR183:8, AR096:8, AR039:8, AR277:8, AR231:8, AR299:7, AR310:7, AR310:7, AR050:7, AR185:7, AR310:7, AR310:7, AR237:6, AR192:6, AR240:6, AR309:6, AR253:6, AR213:5, AR243:5, AR240:6, AR309:6, AR253:6, AR213:5, AR243:5, AR240:6, AR309:6, AR253:6, AR213:5, AR243:5, AR292:5, AR300:5, AR300:5, AR213:5, AR247:4, AR245:5, AR226:5, AR273:5, AR298:5, AR229:5, AR390:6, AR267:4, AR275:4, AR247:4, AR286:5, AR232:4, AR280:4, AR284:4, AR289:4, AR282:5, AR310:4, AR267:4, AR247:4, AR247:4, AR206:4, AR232:4, AR280:4, AR284:4, AR289:4, AR175:4, AR246:4, AR033:3, AR233:2, AR235:3, AR293:3, AR233:2, AR233:2, AR293:3, AR293:3, AR233:2, AR295:3, AR061:2, AR179:2, AR177:2, AR194:2, AR289:4, AR289:4, AR178:2, AR258:2, L0749:3, L0777:3, L0756:2, L0749:2, L0749:2, L0776:2, L0766:2, L0865:2, L0746:2, L0776:2, L0766:2, L0865:2, L0745:2, L0779:2, L0777:3, L0766:2, L0865:2, L0745:2, L0779:2, L0777:3, L0766:2, L0805:1, H0486:1, T0040:1, L3645:1, H0589:1, H0589:1, H0581:1, H0642:1, H0641:1, S0142:1, H0486:1, L0769:1, L0775:1,
307	HLWAE!!	783071	317	AR242:67, AR192:47, AR164:43, AR173:37, AR165:37, AR161:36, AR195:36, AR313:35, AR162:35, AR198:34, AR166:33, AR204:32, AR212:32, AR193:30, AR167:29, AR277:28, AR277:28, AR245:27, AR213:26, AR243:26, AR207:26, AR267:26, AR267:25, AR312:25, AR299:25, AR264:24, AR245:27, AR213:26, AR247:23, AR208:23, AR208:22, AR274:21, AR189:21, AR263:21, AR308:13, AR208:13, AR208:13, AR208:14, AR199:18, AR246:17, AR309:17, AR309:17, AR309:17, AR309:17, AR263:16, AR272:15, AR263:14, AR185:14, AR033:13, AR256:12, AR096:12, AR309:17, AR309:17, AR203:12, AR309:17, AR309:17, AR203:12, AR203:15, AR263:31, AR176:11, AR176:11, AR176:10, AR214:10, AR060:10, AR268:9, AR208:6, AR208:1, H0266:1, H0266:1, H0266:1, H0553:1, H0252:1

				, 0,500 %;
308	H WAO22	587270	318	and LU/48:11. AR214:8. AR217:6. AR222:5, AR215:5, AR221:5, AR172:5, AR309:4, AR275:4, AR163:4, AR161:4,
900	11111111111	213		AR162:4, AR170:4, AR224:4, AR171:4, AR165:4, AR253:3, AR225:3, AR164:3, AR166:3, AR168:3,
				AR223:3, AR263:3, AR169:3, AR311:3, AR264:3, AR197:3, AR216:3, AR271:3, AR183:3, AK308:3,
				AR053:3, AR096:3, AR291:3, AR296:3, AR312:3, AR245:2, AR289:2, AR104:2, AR240:2, AR310:2,
				AR300:2, AR269:2, AR196:2, AR272:2, AR247:2, AR185:2, AR170:2, AR177:2, AR176:2, AR274:2
				AR192:2, AR181:2, AR277:2, AR234:2, AR203:2, AR223:2, AR262:2, AR033:2, AR001:2, AR268:2, AR089:2.
				AR243:2, AR000:2, AR212:2, AR220:2, AR23:1, AR233:1, AR290:1, AR258:1, AR288:1, AR210:1,
				AR285:1, AR039:1, AR193:1, AR191:1, AR299:1, AR293:1, AR238:1 L0439:8, L0751:6, L0747:6, L0665:5,
				10438;4 10779;4, H0012;3, L0748;3, H0620;2, H0594;2, H0424;2, H0553;2, S0144;2, L0769;2, L0771;2,
				1,0809.2, H0144.2, H0593.2, S0027.2, L0777.2, L0758.2, L0587.2, H0422.2, H0171:1, H0713:1, H0664:1,
				H0619 1 80222: 1 H0492: L3653:1, H0618:1, H0253:1, H0581:1, H0052:1, H0150:1, H0024:1, S0388:1,
				20344: H0135: H0040: L0640: L3905: L0761: L0372: L0773: L0648: L0662: L0766: L0
				n 0774:1 10629:1 10666:1 10668:1 H0658:1, H0521:1, S3014:1, H0543:1 and H0423:1.
900	UI WAVSA	658707	310	AR264:5, AR163:5, AR170:5, AR215:5, AR162:5, AR264:5, AR163:5, AR161:4, AR309:4,
900	TCW AID	70.000) -	AR308:4 AR246:4, AR275:4, AR165:4, AR164:4, AR166:4, AR192:4, AR053:4, AR272:4, AR235:4,
				AR271:3, AR312:3, AR212:3, AR198:3, AR213:3, AR311:3, AR282:3, AR172:3, AR254:3, AR225:3,
				AR240.3, AR250.3, AR216.3, AR217.3, AR261.2, AR171.2, AR201.2, AR193.2, AR033.2, AR238.2,
				AR313:2, AR257:2, AR176:2, AR203:2, AR289:2, AR274:2, AR216:2, AR295:2, AR104:2, AR060:2,
				AR096:2, AR285:2, AR243:2, AR221:2, AR200:2, AR286:2, AR291:2, AR277:2, AR283:2, AR316:2,
				AR089:2. AR195:2, AR226:2, AR287:2, AR173:2, AR229:2, AR239:2, AR175:2, AR055:2, AR300:2,
				AR185;2, AR227;2, AR061;2, AR039;1, AR299;1, AR196;1, AR266;1, AR183;1, AR224;1, AR205;1,
				AR267:1, AR190:1, AR247:1, AR191:1, AR297:1, AR182:1, AR294:1, AR232:1, AR258:1, AR233:1,
				AR269:1, AR177:1, AR230:1, AR188:1, AR262:1, AR236:1 H0618:18, H0253:17, L0758:11, H0038:4,
				H0657;2, H0616;2, S0116:1, S0001:1, H0421:1, H0553:1, L0764:1, L0768:1, L0780:1 and H0445:1.
310	HI.WB163	566842	320	AR271:21, AR207:19, AR235:15, AR264:14, AR263:12, AR312:12, AR309:12, AR308:12, AR195:11,
3				AR252:11, AR311:11, AR295:11, AR245:11, AR212:11, AR261:11, AR196:10, AR313:10, AR089:10,
				AR192:10, AR165:10, AR198:10, AR213:10, AR246:10, AR164:10, AR191:9, AR188:9, AR224:9, AR166:9,
				AR177:9, AR223:9, AR096:9, AR205:9, AR253:8, AR170:8, AR161:8, AR053:8, AR162:8, AR2236:8,
				[AR193:8, AR299:8, AR163:8, AR254:8, AR189:8, AR178:8, AR214:8, AR242:8, AR171:8, AR297:8,
				AR285:8, AR168:8, AR225:7, AR175:7, AR216:7, AR197:7, AR222:7, AR174:7, AR190:7, AR181:7,
				AR215:7, AR316:7, AR169:7, AR296:7, AR173:7, AR217:7, AR282:7, AR039:7, AR262:6, AR240:6,
				AR180:6, AR274:6, AR060:6, AR221:6, AR288:6, AR269:6, AK210:6, AK270:6, AK243:0, AK300:0,

				JAR293:6. AR204:6. AR275:6. AR286:6. AR199:6. AR287:6, AR200:6, AR176:5, AR291:5, AR033:5,
				AR268:5, AR250:5, AR201:5, AR257:5, AR172:5, AR238:5, AR255:5, AR272:5, AR260:5, AR277:5,
				AR183:5, AR290:5, AR258:4, AR203:4, AR182:4, AR294:4, AR104:4, AR185:4, AR185:4, AR225:4,
				JAR237.4, AR267.4, AR179.4, AR230.4, AR247.4, AR239.4, AR219.4, AR211.4, AR226.4, AR231.4,
				AR218:3, AR266:3, AR283:3, AR050:3, AR252:3, AR001:3, AR250:3, AR253:3, AR254:3, AR227:3, AR581:4, AR581:3, AR5
				S0114:1. S0116:1. H0663:1. S0360:1. H0645:1. H0586:1. H0587:1. H0333:1. H0331:1. H0486:1. S0280:1.
				H0590:1, S0318:1, H0622:1, H0553:1, H0598:1, L0770:1, L0767:1, L0794:1, L0803:1, L0636:1, L0666:1,
				L0663:1, L0665:1, L0438:1, H0547:1, S0328:1, H0555:1, L0439:1, S0031:1, S0194:1 and H0543:1.
311	HLWBY76	609/6/	321	AR180:20, AR181:14, AR268:6, AR219:5, AR218:5, AR269:5, AR179:5, AR273:5, AR178:4, AR173:4,
				AR184:4, AR183:4, AR176:4, AR270:3, AR221:3, AR215:3, AR175:3, AR282:3, AR214:3, AR052:3,
				JAR267:2, AR309:2, AR202:2, AR253:2, AR312:2, AR162:2, AR266:2, AR182:2, AR165:2, AR216:2,
				AR171:2, AR190:1, AR213:1, AR192:1, AR243:1, AR186:1, AR229:1, AR257:1, AR205:1, AR053:1,
				AR313:1, AR230:1, AR274:1, AR174:1, AR272:1, AR280:1, AR240:1, AR252:1, AR316:1, AR277:1,
				AR284:1, AR263:1, AR172:1, AR096:1, AR271:1 H0553:7, H0412:4, L0747:4, L0779:4, L0777:4, H0615:3,
				L0766;3, H0519;3, L0755;3, L0591;3, H0413;2, L0768;2, L0794;2, L0754;2, L0759;2, L0588;2, H0624;1,
				H0716:1, T0049:1, S0212:1, S0045:1, S0278:1, H0497:1, L0021:1, T0048:1, L0471:1, L0194:1, H0644:1,
				L0142:1, H0269:1, H0056:1, H0059:1, L0475:1, S0422:1, L0761:1, L0646:1, L0806:1, L0655:1, L0789:1,
				L0791:1, H0144:1, H0726:1, H0547:1, H0659:1, H0214:1, L0780:1, L0757:1, L0758:1, L0362:1, S0026:1,
				H0665:1, H0542:1 and H0543:1.
312	HLWCF05	460619	322	AR196:15, AR235:9, AR271:8, AR261:8, AR309:8, AR214:7, AR188:7, AR199:7, AR191:7, AR223:6,
				AR263:6, AR218:6, AR189:6, AR222:6, AR198:5, AR165:5, AR312:5, AR164:5, AR275:5, AR295:5,
				AR166:5, AR240:5, AR308:5, AR190:5, AR311:5, AR282:4, AR264:4, AR224:4, AR161:4, AR162:4,
				AR096:4, AR216:4, AR163:4, AR217:4, AR039:4, AR195:4, AR089:4, AR296:4, AR177:4, AR246:4,
				AR285:4, AR288:4, AR200:4, AR210:4, AR219:4, AR175:4, AR183:4, AR168:4, AR236:4, AR207:4,
				AR253:4, AR174:4, AR299:4, AR178:4, AR192:3, AR060:3, AR203:3, AR316:3, AR181:3, AR238:3,
				AR213:3, AR257:3, AR212:3, AR237:3, AR245:3, AR173:3, AR268:3, AR242:3, AR250:3, AR104:3,
				AR274:3, AR182:3, AR272:3, AR270:3, AR269:3, AR291:3, AR221:3, AR053:3, AR262:3, AR225:3,
				AR258:3, AR226:3, AR289:3, AR176:3, AR232:2, AR234:2, AR193:2, AR277:2, AR211:2, AR239:2,
				AR267:2, AR300:2, AR287:2, AR172:2, AR205:2, AR297:2, AR294:2, AR180:2, AR231:2, AR313:2,
				AR185:2, AR229:2, AR171:2, AR033:2, AR286:2, AR290:2, AR293:2, AR197:2, AR233:2, AR215:2,
				AR243:2, AR201:2, AR061:2, AR227:2, AR179:2, AR228:2, AR283:1, AR255:1, AR247:1, AR260:1,
				AR230:1, AR266:1 L0439:9, L0766:7, H0521:5, L0740:5, L0758:5, S0010:4, L0749:4, H0038:3, L0805:3,
				L0748:3, L0777:3, H0657:2, H0341:2, S0418:2, S0444:2, S0410:2, H0747:2, S0476:2, L3655:2, H0013:2,

				AR235:16, AR164:16, AR217:16, AR192:15, AR165:15, AR212:15, AR171:15, AR172:15, AR166:14, AR216:14, AR161:14, AR162:14, AR163:13, AR170:13, AR215:12, AR089:12, AR308:12, AR261:12, AR3174:11, AR195:11, AR225:10, AR198:10, AR240:10, AR295:10,
		-		AR277:10, AR288:10, AR177:9, AR282:9, AR053:9, AR242:9, AR297:9, AR096:9, AR299:9, AR310:9, AR310:9, AR316:8, AR104:8, AR271:8, AR033:8, AR263:8, AR205:8, AR210:8, AR311:8,
				AR185:8, AR285:7, AR181:7, AR253:7, AR055:7, AR193:7, AR291:7, AR211:7, AR199:7, AR264:7,
				AR215:1, AR213:1, AR218:1, AR19:1, AR203:1, AR235:1, AR17:1, AR200:1, AR200
				AR188:6, AR250:6, AR229:6, AR243:5, AR258:5, AR204:5, AR200:5, AR173:5, AR272:5, AR203:5,
				AR262:5, AR239:5, AR232:5, AR226:5, AR266:5, AR176:5, AR257:5, AR191:5, AR189:5, AR245:5,
				AR227:5, AR237:4, AR231:4, AR234:4, AR294:4, AR230:4, AR268:4, AR290:4, AR256:4, AR255:4,
				AR270:4, AR178:4, AR061:4, AR182:3, AR269:3, AR190:3, AR183:3, AR260:3, AR179:3, AR253:3, AR228:3, AR201:3, AR267:2 L0800:2, L0021:1, H0774:1, L0749:1 and H0445:1.
	HLYAN59	553507	748	
316	HLYAZ61	1352163	326	AR309:19, AR310:16, AR312:13, AR184:8, AR311:7, AR244:5, AR265:5, AR308:5, AR241:4, AR039:4,
				AR052:4, AR096:4, AR282:4, AR206:3, AR316:3, AR161:3, AR162:3, AR163:3, AR263:3, AR183:3,
_				AR205:3, AR266:3, AR267:3, AR170:2, AR254:2, AR264:2, AR277:2, AR053:2, AR243:2, AR313:2,
_				AR186:2, AR270:2, AR173:2, AR299:2, AR246:2, AR253:2, AR193:2, AR298:2, AR165:2, AR268:2,
				AR290:2, AR213:2, AR269:1, AR166:1, AR274:1, AR216:1, AR182:1, AR224:1, AR192:1, AR178:1,
				AR061:1, AR169:1, AR238:1, AR272:1, AR233:1, AR229:1, AR164:1, AR296:1, AR275:1, AR089:1,
				JAR257:1, AR217:1, AR261:1, AR226:1, AR189:1, AR295:1, AR060:1, AR240:1, AR285:1, AR185:1,
				AR289:1, AR293:1 H0542:2, H0543:2, H0556:1, S0114:1, S0134:1, H0641:1, L0664:1, H0445:1, H0423:1,
				H0422:1 and L3377:1.
	HLYAZ61	423998	749	
317	HLYBD32	266657	327	AR250:5, AR253:4, AR243:4, AR165:4, AR271:3, AR166:3, AR164:3, AR235:3, AR229:3, AR225:3,
				AR193:3, AR245:3, AR163:3, AR170:3, AR309:3, AR096:3, AR178:3, AR196:2, AR282:2, AR313:2,
				AR261:2, AR291:2, AR191:2, AR270:2, AR268:2, AR201:2, AR217:2, AR264:2, AR089:2, AR277:2,
				[AR216:2, AR182:2, AR055:2, AR171:2, AR188:2, AR266:2, AR212:2, AR228:2, AR240:2, AR267:2,
				AR312:2, AR300:2, AR257:1, AR195:1, AR247:1, AR274:1, AR213:1, AR173:1, AR290:1, AR189:1,
				AR179:1, AR299:1, AR230:1, AR199:1, AR316:1, AR238:1, AR205:1, AR060:1, AR200:1 L0777:2,
				H0445:2, H0318:1, T0071:1, S0426:1, S0428:1 and L0740:1.
318	HMADS41	596831	328	AR218:19, AR219:19, AR283:12, AR096:12, AR313:11, AR316:10, AR240:10, AR300:9, AR185:9, AR055:9,
				[AR277:9, AR039:8, AR089:8, AR282:8, AR060:8, AR299:7, AR104:7 L0794:4, L0375:3, H0575:2, L0800:2,
				L0789:2, H0556:1, H0662:1, S0418:1, H0619:1, H0549:1, H0590:1, H0052:1, H0083:1, H0266:1, H0286:1,

				H0644:1, S0036:1, H0433:1, H0412:1, H0413:1, T0042:1, S0144:1, S0142:1, S0344:1, L0770:1, L0761:1, L0774:1, H0518:1, L0777:1, L0758:1 and H0665:1.
319	HMADU73	1352177	329	AR283:25, AR089:23, AR055:18, AR219:17, AR316:16, AR218:15, AR096:15, AK2/7:13, AK282:13, AR204:13, AR104:13, AR299:12, AR060:12, AR039:12, AR313:11, AR240:7, AR185:7, AR309:5, AR312:5, AR300:5, AR300:5, AR170:4, AR223:3, AR193:3, AR168:3, AR245:3, AR215:3, AR165:3, AR176:3, AR166:3, AR266:2, AR266:
		, , , , , , , , , , , , , , , , , , ,		AR225:2, AR201:2, AR033:2, AR169:2, AR224:2, AR271:2, AR246:2, AR274:2, AR177:2, AR275:2, AR172:2, AR207:2, AR162:2, AR162:2, AR163:2, AR163:2, AR208:1, AR208:1, AR208:1, AR196:1, AR262:1, AR272:1, AR296:1, AR296:1, AR290:1, AR290:1, AR290:1, AR288:1, AR267:1 H0521:2, AR262:2, AR262:1, AR288:1, AR267:1 H0521:2, AR262:2, AR262:1, AR288:1, AR267:1, H0660:1, AR262:2, AR262:1, L0666:1, L0666:1, H0660:1, L0666:1, L0666
	HMADU73	467053	750	SVI32:1 and fivous:1.
320		1352406	330	AR060:14, AR283:13, AR055:10, AR277:9, AR282:9, AR185:9, AR104:9, AR300:8, AR090:8, AR510:9, AR210:0, AR210:0, AR510:0, AR299:8, AR218:7, AR219:7, AR039:7, AR313:6, AR240:6, AR089:6 H0624:2, S0354:2, S0442:1, S0444:1, S0222:1, H0586:1, L0021:1, H0036:1, H0031:1, L0769:1, L0804:1, L0774:1, H0658:1, H0521:1, R0406:1, L0748:1, and S0462:1.
	HMAM115	1049263	751	
321	Τ ΄	520338	331	AR313:24, AR173:19, AR182:15, AR175:15, AR299:14, AR180:14, AR258:13, AR096:13, AR178:13,
				AR161:12, AR162:12, AR103:12, AR300:12, AR063:12, AR241:12, AR163:10, AR183:10, AR181:10, AR269:11, AR166:11, AR196:11, AR240:11, AR269:11, AR269:10, AR183:10, AR289:10, AR181:10,
				AR242.10, AR174:10, AR270:10, AR296:10, AR219:9, AR233:9, AR238:9, AR218:9, AR191:9, AR293:9, AR242:10, AR196:8, AR198:8, AR242:10, AR198:8, AR242:10, AR242
-				AR260:9, AR268:9, AR192:9, AR294:9, AR254:9, AR260:8, AR260:9, AR201:7, AR275:7, AR255:7, AR297:8, AR287:8, AR286:8, AR386:7, AR193:7, AR290:7, AR290:7, AR201:7, AR275:7, AR255:7,
				AR176:7, AR039:7, AR188:7, AR231:7, AR312:6, AR200:6, AR189:6, AR295:6, AR286:6, AR282:6,
				AR177:6, AR195:6, AR228:6, AR291:6, AR288:6, AR266:6, AR203:6, AR239:6, AR261:6, AR250:6,
				AR267:5, AR263:5, AR053:5, AR277:5, AR170:5, AR203:5, AR257:5, AR227:4, AR223:4, AR308:4,
	-,,			AR2/4.3, AR256.3, AR256.3, AR211.3, AR253.3, AR213.3, AR272.3, AR197.3, AR212.3, AR283.3,
				AR215:3, AR170:3, AR211:3, AR171:3, AR232:3, AR250:3, AR210:3, AR207:2, AR172:2, AR055:2,
_				AR225;2, AR061;2, AR214;2, AR222;2, AR235;2, AR217;2, AR254;1, AR245;1 H0346;1
322	HMDAN54	411318	332	AR254:6, AR253:6, AR215:5, AR309:5, AR213:4, AR039:4, AR264:4, AR204:4, AR165:3, AR272:3,
			_	AR250:3, AR164:3, AR166:3, AR089:3, AR282:3, AR311:3, AR170:3, AR195:3, AK283:3, AK271:3,
				AR161:3, AR312:3, AR163:3, AR247:2, AR245:2, AR169:2, AR263:2, AR212:2, AR199:2, AR177:4, AR161:3, AR299:2, AR163:3, AR299:2, AR2
				AK308:2, AK2/3:2, AK033:2, AK104:4, AK23:1.2, AK23:1.2, AK210:2:1

				AR240:2, AR297:2, AR201:2, AR222:2, AR196:2, AR286:2, AR274:2, AR296:2, AR189:2, AR268:2,
				AR211:2, AR262:2, AR033:2, AR203:2, AR178:2, AR316:2, AR224:2, AR191:2, AR313:2, AR293:2, AR216:2, AR216:2, AR206:1,
				AR210:1, AR289:1, AR290:1, AR231:1, AR173:1, AR252:1, AR175:1, AR228:1, AR256:1, AR185:1,
				AR234:1, AR230:1, AR277:1, AR238:1, AR255:1, AR288:1, AR225:1, AR261:1, AR190:1, AR287:1
273	HAM A O 20	800008	333	LN459:3, LN411:2, SU116:1, HU346:1, HU436:1, HU032:1 and LN458:1.
750	CZNUCIWIII			AR229:11. AR163:11. AR192:10. AR181:10. AR178:10, AR173:10, AR053:10, AR191:10, AR165:10,
				AR234:10, AR257:10, AR299:10, AR164:10, AR233:10, AR166:9, AR180:9, AR236:9, AR174:9, AR238:9,
				AR258:9, AR247:9, AR231:9, AR228:9, AR240:9, AR182:8, AR296:8, AR269:8, AR200:8, AR237:8,
				AR177:8, AR261:8, AR285:8, AR201:8, AR239:8, AR300:8, AR183:7, AR199:7, AR293:7, AR226:7,
				AR204:7, AR089:7, AR198:7, AR235:7, AR290:7, AR243:7, AR189:7, AR287:7, AR270:7, AR294:7,
				AR230:7, AR267:7, AR197:7, AR255:6, AR212:6, AR297:6, AR213:6, AR188:6, AR176:6, AR185:6,
				AR203:6, AR260:6, AR271:6, AR223:6, AR227:5, AR222:5, AR268:5, AR033:5, AR193:5, AR216:5,
				AR275:5, AR168:5, AR282:5, AR250:5, AR225:5, AR312:5, AR286:5, AR256:5, AR190:5, AR264:5,
				AR266:5, AR171:5, AR272:5, AR263:5, AR205:4, AR246:4, AR288:4, AR291:4, AR295:4, AR060:4,
				AR215:4, AR096:4, AR218:4, AR308:4, AR253:4, AR274:4, AR277:4, AR316:4, AR219:4, AR252:4,
			•	AR214:3, AR169:3, AR224:3, AR289:3, AR061:3, AR245:3, AR232:3, AR210:3, AR309:3, AR195:3,
				AR055:3, AR211:3, AR311:3, AR221:3, AR039:3, AR172:2, AR217:2, AR104:2, AR283:1 H0346:1 and
				H0553:1.
324	HMEA148	1352290	334	AR096:11, AR270:10, AR253:10, AR243:9, AR242:8, AR213:8, AR264:7, AR263:7, AR039:7, AR250:6,
				AR300:6, AR309:6, AR161:6, AR162:6, AR313:6, AR163:5, AR268:5, AR312:5, AR173:5, AR282:5,
				AR275:5, AR176:4, AR166:4, AR246:4, AR212:4, AR240:4, AR165:4, AR254:4, AR164:4, AR089:4,
				AR193:4, AR195:4, AR170:4, AR311:4, AR269:4, AR308:4, AR197:3, AR247:3, AR245:3, AR299:3,
				AR235:3, AR252:3, AR221:3, AR316:3, AR266:3, AR225:3, AR053:3, AR177:3, AR214:2, AR228:2,
				AR201:2, AR234:2, AR060:2, AR283:2, AR267:2, AR229:2, AR272:2, AR231:2, AR198:2, AR104:2,
				AR185:2, AR174:2, AR175:2, AR237:2, AR181:2, AR055:2, AR289:2, AR207:2, AR226:2, AR179:2,
				AR290:2, AR239:2, AR233:2, AR257:2, AR217:2, AR277:1, AR261:1, AR061:1, AR238:1, AR171:1,
				AR223:1, AR260:1 H0266:1
	HMEA148	1/960/	752	
325	HMECK83	636035	335	AR313:19, AR165:17, AR164:17, AR166:16, AR161:14, AR163:13, AR162:13, AR183:13, AR216:13,
				AR173:13, AR182:13, AR229:11, AR191:11, AR089:11, AR299:11, AR269:11, AR039:10, AR096:10,
				AR179:10, AR247:10, AR233:10, AR275:10, AR175:10, AR274:10, AR181:10, AR178:10, AR180:10,
				AR196:10, AR192:10, AR189:10, AR242:10, AR293:10, AR053:9, AR176:9, AR290:9, AR212:9, AR185:9,

AR240:9, AR222:9, AR300:9, AR270:9, AR266:9, AR174:9, AR257:9, AR268:9, AR200:9, AR188:9, AR218:9, AR228:9, AR262:8, AR236:8, AR236:8, AR237:8, AR213:8, AR213:8, AR255:8, AR264:8, AR060:7, AR234:7, AR272:7, AR298:7, AR298:7, AR294:7, AR239:7, AR239:7, AR294:7, AR239:7, AR294:7, AR239:7, AR295:7, AR294:7, AR295:7, AR294:6, AR260:6, AR261:6, AR267:6, AR204:6, AR203:5, AR203:3, AR225:3, AR246:4, AR295:3, AR203:3, AR225:3, AR203:3, AR256:3, AR211:3, AR245:4, AR243:2, AR168:2, H0266:1	336	337
	560775	566720
	HMEED18	HMEET96
	326	327

				AR053:11, AR299:10, AR248:10, AR052:10, AR310:10, AR218:9, AR219:9, AR309:9, AR060:9, AR263:9, AR266:9, AR089:9, AR249:9, AR055:8, AR265:8, AR312:8, AR290:7, AR182:7, AR291:7, AR184:7, AP36:7, AP36:7, AP36:7, AP36:7, AP36:7, AP36:6, AR314:6, AR31
				AR175:6, AR289:5, AR282:5, AR185:5, AR298:5, AR240:5, AR104:5, AR283:5, AR296:5, AR183:4, AR315:4, AR033:4, AR179:4, AR041:4, AR238:4, AR293:4, AR247:3, AR177:3, AR229:3, AR244:3,
				AR241:3, AR277:3, AR294:3, AR231:3, AR233:2, AR234:2, AR232:2, AR237:2, AR226:2, AR271:2,
				AK186:2, AK236:2, AKZ81:1, AKZ37:1, LO/48:1, LO435:1, LO/70:3, LO/71:1, LO/40:1, LO/70:3, LO56:2, LO663:2, LO486:2, H0396:2, H0178:2, H0373:2, H0266:2, S0422:2, S0002:2, L0775:2, L0659:2, L0663:2, L0665:2,
				L0438:2, H0666:2, H0521:2, S0027:2, L0754:2, L0601:2, H0667:2, H0624:1, H0717:1, S0114:1, L0415:1,
				L0760:1, S0116:1, H0638:1, H0722:1, H0728:1, H0733:1, S0476:1, H0792:1, H0411:1, H0497:1, L3653:1,
				L3655:1, H0250:1, H0427:1, L0021:1, S0010:1, H0318:1, H0381:1, H0421:1, H074:1, 10110:1, H037:1, S0003:1, H0328:1, H0181:1, H0673:1, H0068:1, H0551:1, S0440:1, H0633:1, S0144:1, L0763:1, L3905:1,
				1,0772:1,1,0764:1,1,0773:1,1,0387:1,1,0650:1,1,0655:1,1,0783:1,1,0384:1,1,0529:1,1,0522:1,1,0666:1,
				H0691:1, H0547:1, L3207:1, H0690:1, H0658:1, H0670:1, S0330:1, H0696:1, L0747:1, L0755:1, L0758:1,
				S0031:1, H0665:1, S0276:1 and H0543:1.
328	HMIAL37	603201	338	AR266:6, AR207:6, AR176:6, AR217:5, AR162:5, AR161:5, AR225:5, AR163:5, AR183:5, AR182:5,
				AR269:5, AR245:5, AR223:5, AR214:4, AR288:4, AR205:4, AR309:4, AR181:4, AR270:4, AR267:4,
				[AR291:4, AR216:4, AR215:4, AR261:4, AR242:4, AR274:4, AR171:4, AR289:3, AR233:3, AR235:3,
				AR177:3, AR195:3, AR175:3, AR286:3, AR053:3, AR287:3, AR198:3, AR268:3, AR294:3, AR236:3,
				[AR237:3, AR255:3, AR228:3, AR180:3, AR238:3, AR257:3, AR173:3, AR172:3, AR311:3, AR271:3,
				AR290:3, AR293:3, AR191:3, AR179:3, AR201:3, AR192:3, AR221:3, AR229:3, AR285:3, AR247:3,
				AR296:3, AR275:3, AR061:3, AR199:3, AR193:2, AR165:2, AR230:2, AR166:2, AR170:2, AR164:2,
				AR190:2, AR243:2, AR222:2, AR178:2, AR262:2, AR060:2, AR039:2, AR231:2, AR256:2, AR204:2,
				[AR260:2, AR200:2, AR168:2, AR297:2, AR189:2, AR188:2, AR234:2, AR239:2, AR282:2, AR316:2,
				AR240:2, AR272:2, AR096:2, AR295:2, AR258:2, AR224:2, AR300:2, AR226:2, AR203:2, AR232:2,
				[AR196:2, AR246:2, AR104:2, AR213:1, AR185:1, AR299:1, AR227:1, AR089:1, AR277:1, AR312:1,
				AR308:1, AR169:1, AR033:1, AR055:1, AR174:1 S0354:2, H0549:2, S0442:1, S0360:1, S0010:1, S0050:1,
				H0015:1, S6028:1, H0622:1, S0038:1, S0440:1, S0436:1 and L0596:1.
329	HMIAP86	726831	339	AR310:10, AR186:10, AR244:10, AR265:9, AR241:9, AR273:7, AR312:7, AR309:7, AR052:7, AR226:6,
				JR202:6, AR248:6, AR161:6, AR246:6, AR061:6, AR162:6, AR163:6, AR104:6, AR238:5, AR212:5,
				JR165:5, AR232:5, AR053:5, AR213:5, AR164:5, AR206:5, AR166:5, AR237:5, AR227:5, AR274:5,
				AR243:5, AR192:5, AR033:5, AR215:5, AR171:4, AR272:4, AR184:4, AR253:4, AR168:4, AR263:4,
				[AR252:4, AR269:4, AR271:4, AR275:4, AR282:4, AR218:4, AR313:4, AR299:4, AR194:4, AR173:4,
	1 ,355.			[AR216:4, AR204:3, AR251:3, AR219:3, AR055:3, AR280:3, AR267:3, AR231:3, AR201:3, AR2024:3,

				AR292:3, AR189:3, AR182:3, AR185:3, AR260:3, AR198:3, AR205:3, AR261:3, AR294:3, AR060:3,
				AK089:3, AR090:3, AR181:3, AR190:3, AR277:3, AR247:3, AR233:3, AR264:3, AR281:3, AR175:3, AR300:3, AR170:3, AR214:3, AR214:3, AR277:3, AR247:3, AR2
				AR284:3, AR266:3, AR249:3, AR229:3, AR039:3, AR316:3, AR245:2, AR230:2, AR228:2, AR221:2,
				AR2/0:2, AR290:2, AR200:2, AR200:2, AR180:2, AR300:2, AR308:2, AR314:2, AR239:2, AR172:2,
				AR225.2, AR289.2, AR199.2, AR258.2, AR234.2, AR315.2, AR291.2, AR195.2, AR259.2, AR200.2,
				AR235:2, AR193:2, AR236:2, AR262:2, AR169:2, AR179:2, AR222::2, AR237:2, AR230:4, AR170:2, AR170:3, AR236:3, AR
				AK286:1, AK211:1, AK196:1, AK17:1, 1222:1, 1222:1, 1222:1, 123:1,
				S0010.1, H0052.1, S0422.1, L0763.1, L0803.1, L0653.1, L0776.1, L0787.1, L0789.1, L0663.1, L0664.1,
ç	0000000	640070	340	L3811:1, H0339:1, 30400:1, E0/47:1, E0/47:1, E0/17:1, E0/
250	HIMINCOO	0/00+6		AR281:19, AR314:19, AR309:19, AR275:19, AR266:18, AR186:18, AR033:17, AR060:17, AR295:17,
				AR285:17, AR283:16, AR298:16, AR259:16, AR055:15, AR273:14, AR271:14, AR192:13, AR277:13,
				AR286:13, AR204:13, AR185:12, AR253:12, AR184:12, AR250:12, AR289:11, AR251:11, AR291:11,
				AR241:10, AR218:10, AR096:10, AR294:10, AR299:10, AR274:10, AR265:9, AR316:9, AR293:9, AK163:3,
				AR313:9, AR219:9, AR089:9, AR213:8, AR282:8, AR254:8, AR212:9, AR210:9, AR219:9, AR089:9, AR203:1,
				AR238:7, AR269:7, AR256:7, AR258:1, AR201:1, AR290:1, AR162:1, AR162:1, AR170:3; AR250:3; AR2
				ARI95:6, ARZ47:6, ARZ06:0, ARZ46:0, ARI30:0, ARZ06:3, ARZ06:4, ARZ06:4, ARZ52:4, ARZ37:4,
				ARCOUS, ARCAS, ARCOS, ARCOS, ARCOT, ARCOT, ARCAS, ARCAS, ARCS, AR191.3, AR171.3,
				AR264-3, AR227-3, AR170:3, AR262:3, AR173:3, AR233:3, AR199:2, AR243:2, AR246:2, AR297:2,
				AR236:2, AR180:2, AR196:2, AR197:2, AR179:2, AR188:2, AR234:2, AR189:2, AR228:2, AR223:2,
				AR168.2, AR190.2, AR200.2, AR288.2, AR225.2, AR239.2, AR261:1, AR287:1, AR308:1, AR193:1,
				AR181:1, AR216:1, AR224:1, AR255:1, AR174:1 L0766:7, L0803:7, S0466:2, L0805:2, L3387:1, H0392:1,
				H0156:1, L0021:1, H0052:1, L0770:1, L0804:1, L0788:1, H0756:1, L0743:1, L073:1,
331	HIMMAH60	562776	341	AR242:10, AR313:9, AR192:9, AR196:7, AR173:7, AR165:7, AR089:7, AR164:6, AR197:6, AR035:0,
				AR161:6, AR162:6, AR245:6, AR183:6, AR193:3, AR033:3, AR293:3, AR163:3, AR173:3, AR273:4, AR240:4.
				AR257:5, AR204:4, AR1 /4:4, AR055:4, AR201:4, AR050:4, AR050:4, AR17:4, AR247:4, AR264:4,
				AK262:4, AK199:4, AK222:4, AK191:4, AK245:4, AR166:4, AR182:4, AK250:4, AR201:4, AR195:4,
				AR203:4, AR170:4, AR218:4, AR213:4, AR296:3, AR060:3, AR316:3, AR258:3, AR275:3, AR205:3,
				AR200:3, AR236:3, AR185:3, AR270:3, AR176:3, AR285:3, AR234:3, AR297:3, AR272:3, AR312:3,

				AR188:3. AR277:3. AR104:3. AR221:3. AR198:3. AR230:3. AR226:3. AR266:3. AR210:3. AR233:3.
				AR237:3, AR268:3, AR239:3, AR216:3, AR231:3, AR181:3, AR288:3, AR222:3, AR290:3, AR211:3,
			•	AR294:2, AR190:2, AR267:2, AR286:2, AR282:2, AR274:2, AR291:2, AR171:2, AR295:2, AR228:2,
			•	AR287:2, AR207:2, AR246:2, AR308:2, AR219:2, AR255:2, AR212:2, AR223:2, AR260:2,
133	CHACOLA	110773	743	AK225:2, AK252:2, AK215:2, AK217:1, AK253:1, AK055:1, AK001:1 L0547:1 and H0444:1.
332	HMQDF12	266844	347	AR252:34, AR203:21, AR253:19, AR207:12, AR204:11, AR272:11, AR198:11, AR193:10,
				AR250:10, AR200:10, AR245:10, AR309:10, AR311:10, AR224:10, AR243:10, AR243:9,
				AR264:9, AR246:9, AR271:9, AR172:9, AR199:9, AR222:9, AR316:8, AR053:8, AR312:8, AR308:8,
				AR254:7, AR221:7, AR266:7, AR171:7, AR223:7, AR215:7, AR210:7, AR197:6, AR240:6, AR039:6,
				AR060:6, AR170:6, AR169:6, AR214:6, AR247:6, AR188:6, AR193:6, AR213:6, AR225:6, AR165:6,
		-		AR164:6, AR168:5, AR201:5, AR235:5, AR161:5, AR166:5, AR162:5, AR192:5, AR176:5, AR268:5,
				AR282:5, AR180:5, AR163:5, AR274:5, AR269:5, AR203:5, AR055:5, AR299:5, AR300:5, AR191:4,
				AR178:4, AR089:4, AR234:4, AR216:4, AR313:4, AR182:4, AR267:4, AR181:4, AR231:4, AR177:4,
				AR183:4, AR290:4, AR175:4, AR174:4, AR217:4, AR270:4, AR229:4, AR196:4, AR218:4, AR033:3,
				AR219:3, AR211:3, AR283:3, AR189:3, AR289:3, AR291:3, AR173:3, AR261:3, AR228:3, AR096:3,
_				AR257:3, AR288:3, AR190:3, AR104:3, AR277:3, AR295:3, AR238:3, AR233:3, AR233:3, AR236:3,
				JAR297:3, AR293:3, AR239:3, AR226:2, AR215:2, AR061:2, AR255:2, AR179:2, AR285:2, AR286:2,
				AR227:2, AR262:2, AR185:2, AR294:2, AR287:2, AR232:2, AR296:2, AR230:2, AR258:2, AR256:2,
				AR260:2 H0622:3, L0659:3, H0670:3, S0408:2, H0606:2, L0646:2, L0771:2, L0561:2, L0560:2, L0774:2,
				L0554:2, L0558:2, L0666:2, H0295:1, H0484:1, S0358:1, S0410:1, H0730:1, L3281:1, H0549:1, H0250:1,
				H0057:1, H0090:1, L0770:1, L0639:1, L0372:1, L0643:1, L0374:1, L0648:1, L0521:1, L0662:1, L0649:1,
				L5574:1, L0806:1, L0805:1, L0527:1, L0657:1, L0783:1, L0383:1, L0519:1, L0790:1, L2257:1, S0378:1,
				L0602:1, H0774:1, S0406:1, S3014:1, L0748:1, L0756:1, L0777:1, L0755:1, L0601:1, S0424:1 and H0352:1.
333	HMQDT36	1309723	343	AR218:25, AR219:21, AR096:17, AR039:13, AR316:13, AR089:12, AR299:9, AR055:9, AR282:9, AR060:8,
				AR252:7, AR185:7, AR313:7, AR277:6, AR240:6, AR300:6, AR104:5, AR283:4, AR263:4, AR164:4,
				AR192:4, AR243:4, AR253:3, AR170:3, AR212:3, AR269:3, AR224:3, AR286:3, AR204:3, AR264:3,
				AR180:3, AR296:2, AR293:2, AR247:2, AR246:2, AR196:2, AR168:2, AR295:2, AR165:2, AR289:2,
				AR176:2, AR214:2, AR053:2, AR271:2, AR175:2, AR268:2, AR171:2, AR234:2, AR222:2, AR178:2,
				[AR275:2, AR213:1, AR182:1, AR173:1, AR267:1, AR285:1, AR225:1, AR183:1, AR189:1, AR195:1,
				AR201:1, AR308:1, AR312:1, AR239:1, AR174:1, AR181:1, AR193:1, AR172:1 L0754:10, L0748:9,
				L0770:8, H0521:8, S0003:7, S0356:5, L0751:5, S0436:5, S0358:4, S0360:4, H0494:4, L0764:4, L0803:4,
				L0731:4, H0580:3, H0615:3, H0591:3, H0040:3, H0623:3, S0422:3, L0771:3, L0776:3, L0666:3, S0406:3,
				L0752:3, S0434:3, H0542:3, S0212:2, H0255:2, H0638:2, S0418:2, L0005:2, S0442:2, S0376:2, S0408:2,
				S0045:2, S0476:2, H0497:2, H0231:2, H0266:2, H0179:2, S0214:2, H0622:2, H0124:2, H0551:2, S0440:2,

				L0805;2, L0809;2, S0374;2, H0547;2, H0660;2, H0648;2, H0709;2, L0740;2, L0759;2, H0445;2, L0596;2,
				1.05997.2, H05306.1, H05306.1, H05407.1, H05407.1, H0549.1, H0549.1, H0549.1, H05506.1, S02222.1, H0548.1, S03444.1, H05306.1, H05411.1, H05496.1, H05496.1, H05496.1, H05506.1, S02222.1,
				H0331:1, H0574:1, H0250:1, H0069:1, H0635:1, H0427:1, S0280:1, T0071:1, H0263:1, H02696:1, H0046:1, H0331:1, H0476:1, H0478:1, H0039:1, T0023:1, L0483:1, T0006:1, H0031:1, L0142:1,
				1.0143:1, 1.0015:1, H0673:1, S0366:1, H0598:1, H0638:1, H0634:1, H0269:1, H0059:1, H0429:1, H0561:1,
				S0438.1, H0509.1, S0150.1, H0646.1, H0652.1, S0142.1, S0210.1, S0602.1, S0426.1, H0529.1, L0637.1,
				L0800:1, L0662:1, L0767:1, L0387:1, L0700:1, L0306:1, L0322:1, L0604:1, L077:1, L077:1, L077:1, L077:1, L077:1, L0804:1,
				\$6428:1, L3819:1, H0701:1, T0068:1, L3811:1, \$0126:1, H0682:1, H0659:1, H0670:1, \$0378:1, H0518:1,
				S0152:1, H0696:1, S0146:1, L0758:1, L0608:1, H0667:1, S0192:1, S0242:1, S0194:1, H0343:1, H0423:1 and H0422:1.
	HIMQDT36	424085	753	C COCCE. C COCCE. C COCCE.
334	HMSBX80	597448	344	AR170:5, AR253:4, AR169:3, AR204:3, AR252:3, AR264:3, AR168:2, AR183:2, AK223:2, AK282:2,
				[AR264:2, AR311:2, AR299:2, AR181:2, AR266:2, AR25/:2, AR309:1, AR283:1, AR293:1, AR253:1, AR
				AK104:1, AK283:1, AK000:1, AK308:1, AK313:1, 110031:2; LX317:2; 12003:1; LX178:1, AK283:1, AK308:1, AK
225	HMCEC21	7CD242	345	AR176.5 AR180.5, AR204.4, AR309.3, AR272.3, AR282.3, AR242.3, AR269.3, AR162.3, AR161.3,
CC	170 10111	121010	2	AR261:3, AR163:3, AR270:3, AR201:3, AR175:3, AR197:3, AR268:3, AR267:2, AR257:2, AR169:2,
				AR229:2, AR233:2, AR236:2, AR039:2, AR266:2, AR188:2, AR179:2, AR238:2, AR217:2, AR060:2,
				AR053:2, AR228:2, AR183:2, AR177:2, AR182:2, AR223:2, AR293:2, AR173:2, AR247:2, AR168:2,
				AR089:2, AR294:2, AR232:2, AR297:2, AR178:2, AR222:2, AR231:2, AR262:2, AR290:2, AR271:2,
				JAR237:2, AR312:2, AR181:2, AR210:2, AR313:2, AR240:2, AR096:2, AR255:2, AR316:2, AR239:2,
				[AR191:1, AR299:1, AR264:1, AR289:1, AR291:1, AR061:1, AR193:1, AR274:1, AR172:1, AR288:1,
				AR234.1, AR205.1, AR300.1, AR199.1, AR277:1, AR185:1, AR230.1, AR286:1, AR250:1, AR200:1,
				AR283:1, AR287:1, AR055:1, AR256:1, AR254:1, AR226:1, AR211:1 S0354:1 and S0002:1.
336	HMSGB14	570833	346	AR039:11, AR313:10, AR299:6, AR089:6, AR096:6, AR254:6, AR253:5, AR104:5, AR277:4, AR185:4,
2				[AR221:3, AR060:3, AR316:3, AR300:2, AR282:2, AR240:2, AR055:2, AR205:2, AR250:2, AR172:2,
				AR263:1, AR225:1, AR311:1, AR204:1, AR218:1, AR286:1, AR283:1, AR293:1, AR161:1, AR312:1,
				AR162:1, AR163:1, AR266:1, AR255:1, AR219:1, AR252:1 H0580:2, H0581:2, H0611:1 and S0002:1.
337	HMSG101	1049069	347	AR313:22, AR039:17, AR096:14, AR165:13, AR161:13, AR162:13, AR164:13, AR163:12, AR166:12,
}				AR264:12, AR089:11, AR312:10, AR299:10, AR316:8, AR219:8, AR300:8, AR218:8, AR277:8, AR104:8,
				AR296:7, AR309:7, AR185:7, AR173:7, AR308:7, AR240:7, AR180:7, AR257:7, AR060:6, AR262:6,
				AR311:6, AR297:6, AR282:6, AR263:6, AR275:6, AR170:6, AR258:6, AR269:6, AR286:3, AR260:3,

	,			AR274:5, AR294:5, AR171:5, AR287:5, AR224:5, AR290:5, AR053:5, AR235:5, AR247:5, AR291:5,
				AR196:5, AR270:5, AR055:5, AR285:5, AR261:5, AR295:5, AR266:4, AR212:4, AR178:4, AR181:4,
				ARLIE'S, ARCOUS, ARCIES, AREEES, ARCIOS, ARTIOSS, ARIOSS, ARIOSS, ARIOSS, ARIOSS, AREES, AROUND A POSS. A APOSS. A APOSS. A APOSS. A APOSS. A APOSS. A APOSS. A AROUND A APOSS. A AROUND A AROUND A AREA AROUND A
				AR255;3, AR192;3, AR283;3, AR174;3, AR223;3, AR268;3, AR221;3, AR215;3, AR190;3, AR293;3,
				AR189:3, AR250:3, AR172:3, AR188:3, AR193:3, AR267:3, AR237:3, AR246:3, AR231:3, AR288:3,
				AR233:2, AR226:2, AR203:2, AR256:2, AR033:2, AR245:2, AR230:2, AR176:2, AR177:2, AR239:2,
				AR228:2, AR205:2, AR210:2, AR216:1, AR254:1 L0748:20, L0740:5, S0360:3, L0749:3, L0485:3, H0635:2,
				H0288:2, H0644:2, H0647:2, L0775:2, L0659:2, H0521:2, L0779:2, H0624:1, H0556:1, H0663:1, L0005:1,
				H0580:1, S0045:1, S0476:1, H0549:1, T0039:1, T0114:1, H0013:1, H0250:1, H0097:1, H0590:1, S0010:1,
				L0105:1, H0581:1, H0209:1, H0123:1, H0023:1, S6028:1, H0247:1, S0214:1, H0622:1, L0483:1, H0031:1,
				H0591:1, H0269:1, H0623:1, T0042:1, H0280:1, H0561:1, S0142:1, S0002:1, S0426:1, H0529:1, L0536:1,
				L0661:1, L0517:1, L0518:1, L0792:1, S0126:1, H0672:1, H0539:1, S0146:1, H0555:1, H0436:1, S3014:1, S0027:1, 10743:1, 10777:1, 10757:1, 10758:1, H0445:1, L0596:1, H0667:1, and H0677:1.
	HMSGU01	1158803	754	
	HMSGU01	853368	755	
338	HMSHM14	461897	348	AR055:34, AR060:32, AR089:16, AR104:16, AR283:14, AR299:13, AR172:12, AR039:12, AR096:11,
				AR185:11, AR282:10, AR277:10, AR316:9, AR300:9, AR161:7, AR162:7, AR253:7, AR163:7, AR171:7,
				AR236:7, AR250:6, AR312:6, AR168:6, AR235:6, AR169:6, AR264:5, AR274:5, AR245:5, AR195:5,
				AR240:5, AR197:5, AR291:5, AR218:5, AR254:5, AR313:5, AR053:5, AR246:4, AR193:4, AR275:4,
				AR295:4, AR308:4, AR285:4, AR272:4, AR198:4, AR271:4, AR212:4, AR170:4, AR191:4, AR311:4,
				AR201:4, AR252:4, AR269:4, AR181:4, AR225:4, AR309:4, AR204:3, AR286:3, AR033:3, AR178:3,
				AR266:3, AR222:3, AR165:3, AR175:3, AR257:3, AR180:3, AR268:3, AR221:3, AR243:3, AR196:3,
				AR219:3, AR176:3, AR182:3, AR189:3, AR190:3, AR247:3, AR261:3, AR293:3, AR188:3, AR287:3,
				AR173:3, AR297:3, AR258:3, AR199:3, AR1 <i>7</i> 7:3, AR183:3, AR223:3, AR262:3, AR289:3, AR174:3,
				AR179:3, AR232:3, AR228:3, AR224:3, AR288:2, AR294:2, AR290:2, AR233:2, AR267:2, AR255:2,
				[AR210:2, AR270:2, AR229:2, AR296:2, AR213:2, AR231:2, AR238:2, AR164:2, AR200:2, AR166:2,
				AR239:2, AR226:2, AR237:2, AR211:2, AR217:2, AR263:2, AR203:2, AR256:2, AR227:2, AR061:2,
				AR260:2, AR205:2, AR234:1, AR215:1, AR216:1 S0002:1
339	HIMSHS36	1127691	349	AR039:6, AR055:5, AR218:5, AR060:5, AR300:5, AR185:4, AR313:4, AR299:4, AR240:4, AR104:3,
				AR316:3, AR096:3, AR282:3, AR089:3, AR283:2, AR277:1 S0002:1
	HMSHS36	1028961	756	
340	HMSJM65	633637	320	AR282:6, AR218:6, AR055:4, AR060:4, AR313:4, AR104:4, AR219:4, AR300:3, AR299:3, AR039:3, AR039:3, AR030:3, AR0
				ARU90:3, AR310:3, AR203:2, AR240:2, AR103:2, AR311:2 L0194:4, L0132:4, L0130:3, 110030:2;

				S0002:2, L0747:2, L0756:2, L0777:2, L0757:2, S0442:1, S0444:1, L0717:1, H0013:1, H0263:1, T0110:1, H0615:1, T0006:1, H0488:1, H0743:1, L0770:1, L0766:1, L0766:1, L0803:1, L0805:1, L0776:1, L0659:1, L0809:1, L0790:1, L0791:1, H0819:1, H0670:1, H0672:1, S0406:1, L0744:1, L0731:1, H0445:1, S0436:1 and L0500:1, L0790:1, L0790:1, L0790:1, H0819:1, H0870:1, H0870:1, H0870:1, L0744:1, L0731:1, H0845:1, S0436:1 and L0500:1, L0790:1, H0845:1, L0790:1, H0845:1, L0790:1, H0845:1, L0790:1, H0845:1, H0870:1, H0870:
341	HMSJU68	427121	351	AR089:10, AR055:9, AR060:7, AR039:7, AR185:7, AR313:7, AR300:6, AR218:6, AR316:5, AR240:5, AR089:10, AR096:5, AR299:4, AR283:4, AR277:3, AR282:3, AR219:2 L0560:5, L0545:4, S0002:2, L5574:2, AR104:5, AR096:5, AR299:4, AR283:4, AR277:3, AR282:3, AR219:2 L0560:5, L0545:4, S0374:1, H0520:1, H0240:1, S0046:1, H0333:1, H0597:1, H0014:1, L5569:1, L0533:1, L0519:1, L0544:1, S0374:1, H0520:1, S0454:1, S0406:1 and L3813:1.
342	HMSKC04	799540	352	AR313:12, AR173:10, AR161:9, AR162:9, AR163:9, AR258:7, AR196:7, AR175:7, AR257:7, AK240:7, AR2313:12, AR262:6, AR262:6, AR180:6, AR180:6, AR180:6, AR179:6, AR183:6, AR185:6, AR269:6, AR176:6, AR274:6, AR234:6, AR234:6, AR299:5, AR191:5, AR233:5, AR293:5, AR234:6, AR293:5, AR299:5, AR299:5, AR290:5, AR290:5, AR290:5, AR290:5, AR290:5, AR290:5, AR290:5, AR290:4, AR290:4, AR294:4, AR231:4, AR238:4, AR177:4, AR182:4, AR285:4, AR285:4, AR285:4, AR290:4, AR174:4, AR219:4, AR285:4, AR285:4, AR290:4, AR290:4, AR293:3, AR293:3, AR293:3, AR293:3, AR295:3,
				AR190:3, AR245:3, AR033:3, AR188:3, AR217:3, AR053:3, AR312:3, AR311:3, AR060:3, AR272:3, AR190:3, AR165:2, AR164:2, AR250:2, AR166:2, AR282:2, AR263:2, AR232:2, AR171:2, AR243:2, AR170:2, AR289:2, AR308:2, AR039:2, AR213:2, AR061:2, AR055:2, AR210:2, AR210:2, AR225:2, AR212:1, AR235:1, AR211:1, AR193:1, AR216:1, AR201:1, AR205:1, AR205:1, AR205:1, AR206:2, S0114:1
343	HMTAD67	588447	353	AR313:17, AR196:14, AR173:13, AR165:11, AR161:10, AR164:10, AR162:10, AR166:10, AK242:10, AR163:10, AR268:8, AR268:8, AR163:10, AR180:10, AR096:10, AR089:9, AR240:9, AR262:8, AR178:8, AR247:8, AR258:8, AR200:8, AR296:8, AR185:8, AR191:8, AR175:8, AR300:7, AR234:7, AR179:7, AR238:7, AR238:7, AR236:7, AR236:7, AR291:6, AR297:6, AR264:7, AR199:7, AR219:6, AR209:6, AR209:6, AR297:6, AR287:6, AR293:6, AR170:6, AR260:6, AR218:6, AR203:6, AR277:6, AR277:6, AR277:6, AR277:5, AR263:5, AR269:5, AR277:5, AR263:5, AR294:5, AR212:5, AR188:5, AR276:5, AR277:5, AR285:4, AR285:4, AR287:6, AR285:5, AR285:5, AR285:4, AR285:4, AR285:4, AR285:4, AR285:6, AR2823:5, AR285:4, AR285:4, AR285:6, AR2823:5, AR285:4, AR285:4, AR285:6, AR2823:5, AR285:4, AR285:6, AR2823:5, AR285:4, AR28
				AR231:4, AR260:4, AR277:4, AR268:4, AR204:4, AR214:4, AR254:4, AR280:4, AR220:4, AR280:3, AR390:3, AR176:4, AR235:4, AR272:4, AR311:4, AR239:3, AR288:3, AR295:3, AR193:3, AR211:3, AR309:3, AR217:3, AR308:3, AR266:3, AR283:3, AR252:3, AR172:3, AR205:2, AR201:1, AR246:3, AR190:3, AR222:2, AR289:2, AR210:2, AR271:2, AR061:2, AR205:2, AR205:2, AR206:3, H0556:1, AR195:1, AR195:1, AR195:1, AR243:1, L0439:9, S0440:8, L0438:7, H0521:5, S0040:3, H0556:2, L0653:2, L0751:2, H0457:2, H0024:2, H0687:2, H0031:2, H0264:2, H0488:2, H0494:2, H0529:2, L5622:2, L0663:2, L0751:2,

				L0596:2, H0265:1, L3644:1, S0134:1, H0484:1, H0661:1, H0638:1, S0418:1, S0442:1, L3713:1, H0733:1, S0045:1, H0749:1, H0261:1, H0370:1, H0590:1, H0618:1, H0253:1, H0194:1, H0083:1, H0510:1, H0594:1,
				H0266:1, H0644:1, H0032:1, H0087:1, H0272:1, H0268:1, H0623:1, H0102:1, H0561:1, H0509:1, L3904:1, H0436:1, H04
				\$3012:1, \$0028:1, L0731:1, \$0436:1, L0605:1, L0601:1, H0667:1, \$0194:1, H0543:1, H0506:1 and H0008:1.
344	HMUAP70	872208	354	AR104:41, AR281:39, AR194:37, AR202:37, AR283:37, AR089:36, AR246:33, AR265:33, AR315:31,
				JAR280:31, AR244:30, AR263:30, AR096:29, AR205:29, AR310:28, AR282:27, AR198:27, AR274:26,
				JAR273:25, AR314:25, AR316:25, AR060:25, AR271:25, AR206:24, AR309:24, AR243:24, AR219:23, AR312:23, AR313:20, AR313:20, AR211:20,
				AR053:19, AR277:19, AR247:19, AR204:19, AR055:18, AR039:18, AR300:18, AR240:17, AR295:17,
				AR232:16, AR052:16, AR185:16, AR275:15, AR183:14, AR177:13, AR229:11, AR238:11, AR227:10,
				[AR226:10, AR292:10, AR256:10, AR231:10, AR175:10, AR234:10, AR186:9, AR293:9, AR248:9, AR253:9,
				AR237:8, AR258:8, AR294:8, AR249:8, AR259:8, AR061:8, AR285:7, AR266:7, AR284:7, AR233:7,
				AR268:6, AR286:5, AR291:5, AR289:5, AR179:5, AR267:4, AR270:4, AR296:4, AR298:4, AR182:4,
				AR269:4, AR184:3, AR290:3 H0556:4, H0013:3, H0052:3, H0090:3, H0591:3, S0010:2, H0046:2, S0214:2,
				H0032:2, H0056:2, H0529:2, S0432:2, H0171:1, S0134:1, S0212:1, H0431:1, H0587:1, H0559:1, T0039:1,
				T0112:1, H0575:1, H0421:1, S0049:1, H0050:1, H0012:1, H0510:1, S6028:1, H0181:1, H0617:1, S0036:1, H0413:1, H0623:1, H0059:1, S0386:1, H0494:1, S0126:1, H0539:1, H0543:1 and H0423:1.
	HMUAP70	723302	757	
	HMUAP70	778820	758	
	HMUAP70	674913	759	
	HMUAP70	646810	160	
	HMUAP70	381964	761	
345	HMVBN46	626667	355	AR207:5, AR242:4, AR053:4, AR225:4, AR205:4, AR252:4, AR198:3, AR192:3, AR165:3, AR162:3,
				AR161:3, AR215:3, AR196:3, AR222:3, AR235:3, AR197:3, AR217:3, AR214:3, AR263:2, AR201:2,
				AR264:2, AR193:2, AR311:2, AR216:2, AR180:2, AR236:2, AR033:2, AR261:2, AR257:2, AR164:2,
				JAR285:2, AR221:2, AR243:2, AR296:2, AR295:2, AR168:2, AR254:2, AR174:2, AR189:2, AR246:2,
				AR191:2, AR288:2, AR316:2, AR188:2, AR287:2, AR195:2, AR200:2, AR185:2, AR277:2, AR255:2,
				AR299:2, AR176:2, AR224:2, AR230:2, AR313:2, AR039:2, AR229:2, AR270:2, AR293:2, AR177:2,
	•			AR181:2, AR312:2, AR183:2, AR308:2, AR166:2, AR300:2, AR238:2, AR175:2, AR268:2, AR089:2,
				AR190:1, AR274:1, AR204:1, AR199:1, AR262:1, AR226:1, AR237:1, AR258:1, AR182:1, AR272:1,
				AR239:1, AR234:1, AR228:1, AR231:1, AR269:1, AR227:1, AR297:1, AR211:1, AR309:1, AR286:1,
				AR240:1, AR096:1, AR203:1, AR060:1, AR055:1, AR291:1 S0212:1 and S0106:1.

1352198															т-									Т	٦ .
HMWF002 1352198 357	AR309:10, AR312:10, AR308:10, AR254:9, AR250:9, AR253:8, AR264:8, AR246:8, AR198:7, AR211:7,	AR268:7, AR263:7, AR1953:7, AR195:1, AR197:1, AR197:1, AR197:3, AR269:6, AR269:6, AR269:6, AR178:6, AR180:6, AR275:6, AR219:6, AR290:6, AR240:5, AR190:5, AR219:5, AR190:5, AR190:5, AR290:3, AR195:3, AR196:3, AR290:3, AR196:3, AR196:3, AR196:3, AR196:3, AR161:4, AR161:4, AR187:4, AR187:4, AR187:4, AR161:4,	AR165:5, AR201:5, AR089:4, AR200:4, AR161:4, AR104:4, AR105:4, AR196:4, AR316:4, AR182:4, AR1961:4, AR166:4, AR166:4, AR178:4, AR173:4, AR252:4, AR196:4, AR36:4, AR36	AR212:4, AR223:4, AR168:4, AR266:4, AR193:4, AR172:3, AR169:3, AR245:3, AK253:3, AR175:3, AR212:4, AR212:3, AR214:3, AR300:3, AR291:3, AR288:3, AR238:3, AR060:3,	AR242:3, AR236:3, AR257:3, AR222:3, AR205:3, AR229:3, AR299:3, AR199:2, AR234:2, AR255:2, AR242:3, AR256:3, AR257:3, AR257:3, AR257:3, AR258:3, AR2	AR104:2, AR204:2, AR286:2, AR055:2, AR210:2, AR289:2, AR228:2, AR295:4, AR210:2, AR255:2, AR294:2, AR205:3, AR294:3, AR285:2, AR285:2, AR213:2, AR277:2, AR294:2,	AR061:2, AR287:2, AR231:2, AR215:2, AR237:2, AR262:2, AR226:2, AR170:2, AR221:2, AR217:1,	AR283:1, AR296:1, AR033:1, AR258:1, AR256:1, AR171:1, AR252:1 LO774:4, L066:1, L066:2, L0770:3, L0770:3, L076:4, L076:	L0/4/:, L0/39:/, f10330:3, L0/39:3, L0/30:3, L0605:3, H0265:2, H0341:2, S0418:2, S0360:2, H0637:2, L0804:3, L0859:3, L08	H0580:2, S0046:2, H0643:2, H0618:2, H0083:2, H0561:2, L0761:2, L0767:2, L0775:2, H0144:2, S0126:2, H0580:2, S0046:2, H0643:2, H0641:1, S0356:1	L0740:2, L0751:2, L0757:2, T0002:1, H0/13:1, H0630:1, L0/63:1, S0031:1, S0232:1, I3003:1; H0620:1, H0620:1, H0253:1, H0069:1, H0050:1, H0620:1, H06	503/6:1, 30045.1, 110012.1, 3027.1; 1, 3027.1; 1, 40056.1, 40090.1, 40591:1, 40551:1, 40413:1, 40056:1	H0623:1, L0564:1, L0475:1, H0509:1, H0646:1, S0344:1, H0529:1, L0369:1, L0667:1, L0662:1, L0768:1,	L0803:1, L0774:1, L0378:1, L0805:1, L0661:1, L0657:1, L0788:1, L0663:1, L0665:1, S0374:1, L0438:1,	H0682:1, H0648:1, S0380:1, H0/10:1, H04/8:1, L0/13-1, L0/	ARI73:11, AR228:8, AR178:8, AR173:8, AR313:7, AR179:6, AR236:6, AR240:6, AR180:6, AR200:6, AR	AR174-6 AR199:6. AR229:5, AR235:5, AR176:5, AR270:5, AR261:5, AR181:5, AR285:5, AR247:5,	AR161:5, AR299:5, AR233:5, AR162:5, AR163:5, AR288:5, AR269:5, AR268:5, AR287:5, AR253:5,	AR260:5, AR226:4, AR228:4, AR096:4, AR234:4, AR189:4, AR1//:4, AR290:4, AR250:4, AR289:4,	AR297.4, AR286.4, AR300.4, AR293.4, AR103.4, AR108.4, AR297.4, AR282.3, AR231.3, AR291.3,	AR23/:4, AR100:4, AR310:4, AR250:-4, AR256:3, AR168:3, AR060:3, AR190:3, AR210:3, AR264:3,	AR211:3, AR207:3, AR250:3, AR274:3, AR211:3, AR104:3, AR223:2, AR227:2, AR055:2, AR225:2,	AR033:2, AR272:2, AR215:2, AR214:2, AR232:2, AR061:2, AR277:2, AR224:2, AR309:2, AR1/1:2,		
HMWEB02 638159 HMWFO02 135219		<u> </u>														357									762
HMWFO02	638159								•	•						1352198									542061
346	_															HIMWF002									HMWF002
	346															347									

3/8	UNAWEVIO	1075721	358	AB176.5 AB161.5 AB163.5 AB163.5 AB181.5 AB055.5 AR209.5 AR209.5 AR204.5.
- }				AR228-5 AR261-4 AR235-4 AR267-4 AR309-4 AR177-4 AR271-4, AR183-4, AR168-4, AR182-4,
				AR223:4, AR252:4, AR239:4, AR233:4, AR257:4, AR255:3, AR197:3, AR236:3, AR270:3, AR291:3,
				AR230.3, AR231.3, AR238.3, AR268.3, AR289.3, AR175.3, AR275.3, AR300.3, AR185.3, AR207.3,
				AR193:3, AR237:3, AR226:3, AR061:3, AR165:3, AR296:3, AR173:3, AR262:3, AR164:3, AR283:3,
				[AR294:3, AR290:3, AR166:3, AR293:3, AR089:3, AR254:3, AR174:3, AR272:3, AR179:3, AR221:3,
				AR266:3, AR288:3, AR264:3, AR178:2, AR222:2, AR225:2, AR201:2, AR227:2, AR295:2, AR104:2,
				AR171:2, AR247:2, AR316:2, AR224:2, AR190:2, AR216:2, AR191:2, AR214:2, AR232:2, AR287:2,
				AR234:2, AR096:2, AR274:2, AR198:2, AR285:2, AR286:2, AR240:2, AR258:2, AR192:2, AR277:2,
				[AR200:2, AR311:2, AR299:2, AR203:2, AR053:2, AR217:2, AR196:2, AR312:1, AR189:1, AR282:1,
				AR188:1, AR169:1, AR210:1, AR172:1, AR033:1, AR039:1, AR213:1, AR313:1, AR180:1, AR219:1, AR207:1 AR218:1 H0419:2 H0717:1 H0341:1 S0036:1 H0547:1 and L0595:1
	HMWFY10	490495	763	
349	HMWGY65	1308287	359	AR252:173, AR197:148, AR254:148, AR178:122, AR242:117, AR195:115, AR230:108, AR198:97,
				AR170:89, AR180:88, AR207:86, AR204:86, AR171:82, AR297:78, AR250:78, AR257:76, AR260:75,
				AR181:75, AR228:73, AR261:71, AR176:70, AR233:69, AR245:67, AR272:67, AR203:67, AR235:65,
				AR200:64, AR255:62, AR296:62, AR239:62, AR287:59, AR201:58, AR234:57, AR258:57, AR243:57,
		_		AR293:56, AR168:56, AR193:56, AR288:54, AR262:53, AR192:52, AR253:52, AR266:52, AR165:51,
				AR308:49, AR172:48, AR169:48, AR179:48, AR162:47, AR289:47, AR174:46, AR164:44, AR182:44,
				AR033:44, AR256:44, AR161:43, AR236:43, AR191:43, AR188:43, AR212:43, AR166:43, AR173:41,
				AR227:41, AR185:41, AR053:40, AR237:40, AR163:40, AR275:38, AR229:36, AR300:35, AR294:35,
				AR210:33, AR267:32, AR295:32, AR190:32, AR286:31, AR189:31, AR199:31, AR269:31, AR225:31,
				AR183:30, AR285:30, AR226:27, AR231:27, AR291:27, AR232:26, AR175:26, AR061:25, AR271:25,
			_	AR246:25, AR104:25, AR282:24; AR213:24, AR211:24, AR238:23, AR205:23, AR177:22, AR316:22,
				AR060:22, AR270:22, AR274:21, AR196:21, AR264:21, AR247:20, AR055:19, AR290:19, AR313:18,
				AR299:18, AR283:18, AR268:17, AR277:17, AR089:16, AR039:16, AR240:15, AR217:14, AR224:13,
				AR221:13, AR218:13, AR263:12, AR312:12, AR216:12, AR309:11, AR311:11, AR219:10, AR096:10,
				AR223:6, AR222:6, AR284:5, AR214:4, AR184:4, AR215:4, AR310:3, AR265:3, AR259:3, AR298:2,
				AR292:2, AR052:2, AR186:2, AR206:1, AR273:1 H0251:6, L0803:4, L0439:4, L0794:3, L0659:3, S0206:3,
				L0749:3, H0624:2, H0713:2, H0341:2, H0599:2, H0575:2, H05050:2, H0328:2, H0413:2, L0805:2, L0776:2,
				H0716:1, H0662:1, S0356:1, S0360:1, H0733:1, H0208:1, H0586:1, H0333:1, H0486:1, H0618:1, H0318:1,
				H0123:1, L0471:1, H0024:1, T0006:1, H0644:1, S0210:1, L0769:1, L0638:1, L0648:1, L0662:1, L0804:1,
				L0375:1, L0806:1, L0783:1, L0809:1, L5622:1, L0789:1, L0790:1, H0689:1, H0539:1, H0789:1, S3014:1,
				L0744:1, L0751:1, L0777:1, L0731:1, H0445:1 and L2174:1.

	HDMWGY65	794987	764	3.05 day 2.00 day 2.00 day 2.00 day
350	HNEAC05	519340	360	AR176:8, AR224:6, AR266:6, AR171:6, AR223:6, AR162:5, AR161:3, AR181:3, AR1802:3, AR170:3, AR176:8, AR224:6, AR228:5, AR269:5, AR239:5, AR239:4, AR239:4, AR239:4, AR270:4, AR189:4, AR269:4, AR238:5, AR263:4, AR255:4, AR218:4, AR268:4, AR269:4, AR280:4, AR280:4, AR288:4, AR178:4, AR268:4, AR280:4, AR180:4, AR180:4, AR290:4, AR177:4, AR266:4, AR266:4, AR288:4, AR176:3, AR267:4, AR060:4, AR229:4, AR180:4, AR237:4, AR177:4, AR263:4, AR266:3, AR264:3, AR270:3, AR270:3, AR270:3, AR291:3, AR293:3, AR271:3, AR290:3, AR290:3, AR291:3, AR291:3, AR293:3, AR271:3, AR293:3, AR291:3, AR293:3, AR291:3, AR293:3, AR190:3, AR285:2, AR286:3, AR297:2, AR293:3, AR199:2, AR298:2, AR286:2, AR298:2, AR
351	HNEEB45	1036397	361	H0179:1 and H0100:1.
	HNEEB45	842650	765	9.0000 10.000 10.000 0 10.0000
352	HNFGF20	753337	363	AR273:25, AR052:20, AR274:13, AR218:10, AR241:9, AR248:9, AR277:3, ARL505:8, AR18058, ARL495:0, AR3712:8, AR3712:8, AR309:7, AR183:7, AR253:7, AR299:7, AR244:6, AR251:6, AR292:6, AR212:8, AR271:8, AR310:6, AR096:5, AR213:5, AR185:5, AR089:4, AR080:4, AR080:5, AR292:6, AR293:4, AR269:4, AR260:4, AR202:5, AR293:4, AR269:4, AR276:4, AR206:4, AR206:4, AR192:4, AR293:4, AR249:4, AR260:4, AR206:3, AR293:4, AR240:4, AR240:4, AR206:3, AR293:4, AR240:4, AR240:4, AR293:4, AR240:3, AR240:1, AR240:1, AR240:1, AR240:1, H0053:1, H0059:1, H0059:1, H0059:1, H0050:1, L0059:1, L0050:1, L0050:1, L0050:1, L0050:1, AR240:10, AR240:

				APPROA APPRESA APPROA APPROA APPROA APPROA APPROA APPROA APPROA
				AR220.4, AR003.4, AR162.4, AR220.4, AR623.3, AR089.3, AR185.3, AR300.3, AR259.3, AR223.3,
				AR060:3, AR179:3, AR195:2, AR217:2, AR267:2, AR295:2, AR294:2, AR224:2, AR234:2, AR216:2,
				AR256:2, AR258:2, AR168:2, AR221:2, AR178:2, AR225:2, AR227:2, AR237:1, AR169:1, AR171:1, AR256:1, AR254:1 H0556:2, H0271:2 and H0619:1.
354	HINFJF07	577013	364	AR104:20, AR055:15, AR060:14, AR229:13, AR283:12, AR039:11, AR313:10, AR089:10, AR096:9,
				AR316:9, AR161:8, AR162:8, AR299:8, AR163:8, AR165:7, AR282:7, AR164:7, AR166:7, AR185:6,
				AR240:6, AR300:6, AR274:6, AR219:5, AR053:5, AR277:5, AR263:5, AR309:5, AR275:5, AR172:5,
				AR181:4, AR250:4, AR257:4, AR236:4, AR177:4, AR218:4, AR261:4, AR228:4, AR171:4, AR266:4,
				[AR183:4, AR178:4, AR238:4, AR264:4, AR225:4, AR235:4, AR255:3, AR215:3, AR293:3, AR286:3,
				AR233:3, AR179:3, AR222:3, AR234:3, AR262:3, AR237:3, AR247:3, AR182:3, AR287:3, AR168:3,
				AR226:3, AR223:3, AR201:3, AR311:3, AR239:3, AR290:3, AR200:3, AR231:3, AR308:2, AR195:2,
				AR199:2, AR061:2, AR227:2, AR216:2, AR285:2, AR312:2, AR296:2, AR271:2, AR232:2, AR180:2,
				AR270:2, AR291:2, AR298:2, AR230:2, AR191:2, AR289:2, AR224:1, AR246:1, AR295:1, AR188:1,
				AR193:1, AR217:1, AR242:1, AR214:1 H0271:2, H0581:1, H0051:1, H0163:1, L0599:1 and H0422:1.
355	HNFJH45	410107	365	AR176:7, AR266:6, AR235:6, AR267:6, AR060:5, AR228:5, AR229:5, AR178:5, AR269:5, AR055:4,
				[AR239:4, AR161:4, AR182:4, AR183:4, AR233:4, AR163:4, AR236:4, AR237:4, AR181:4, AR268:4,
				[AR162:4, AR226:4, AR170:3, AR230:3, AR201:3, AR296:3, AR270:3, AR291:3, AR227:3, AR289:3,
				[AR164:3, AR172:3, AR271:3, AR193:3, AR175:3, AR231:3, AR173:3, AR165:3, AR261:3, AR238:3,
				AR282:3, AR166:3, AR257:3, AR283:3, AR287:3, AR293:3, AR179:3, AR294:3, AR290:3, AR217:3,
				AR288:2, AR185:2, AR286:2, AR247:2, AR089:2, AR285:2, AR240:2, AR316:2, AR061:2, AR218:2,
				JAR309:2, AR232:2, AR295:2, AR168:2, AR096:2, AR222:2, AR104:2, AR171:2, AR210:2, AR300:2,
				[AR177:2, AR219:2, AR211:2, AR299:2, AR234:2, AR180:2, AR274:2, AR277:2, AR033:1, AR308:1,
				AR297:1, AR272:1, AR243:1, AR191:1, AR260:1, AR169:1, AR313:1, AR213:1, AR262:1, AR250:1,
				AR225:1 H0271:1 and H0787:1.
356	HNGAK47	561488	366	AR250.13, AR176.5, AR235.5, AR204.5, AR266.4, AR267.4, AR309.4, AR162.4, AR161.4, AR163.3,
				[AR253:3, AR228:3, AR274:3, AR261:3, AR254:3, AR268:3, AR237:3, AR181:3, AR239:3, AR2333:3,
				[AR282:3, AR262:3, AR229:3, AR289:3, AR247:3, AR236:3, AR238:3, AR224:2, AR183:2, AR255:2,
				JAR178:2, AR214:2, AR182:2, AR257:2, AR221:2, AR245:2, AR053:2, AR226:2, AR225:2, AR313:2,
				AR271:2, AR234:2, AR179:2, AR223:2, AR231:2, AR269:2, AR669:2, AR661:2, AR270:2, AR227:2,
				[AR240:2, AR217:2, AR205:2, AR175:2, AR033:2, AR200:2, AR165:2, AR312:2, AR264:2, AR272:2,
				AR164:2, AR283:2, AR222:2, AR197:1, AR188:1, AR177:1, AR172:1, AR287:1, AR055:1, AR290:1,
				AR190:1, AR193:1, AR212:1, AR299:1, AR060:1, AR201:1, AR180:1, AR286:1, AR293:1, AR294:1,

1. P. 2. C. 1. A. P. 2. 1. A. P. 20 S. 1. HO. 71: 1 and SO 6. 1.		766	767
		904311 7	904812 7
		HNGBC07	HNGBC07
	357		

AR250:53, AR253:45, AR254:36, AR245:30, AR243:20, AR212:19, AR264:19, AR263:17, AR197:16, AR272:15, AR195:15, AR308:14, AR312:13, AR193:12, AR240:12, AR218:12, AR180:12, AR275:11, AR246:11, AR173:11, AR242:10, AR207:10, AR311:10, AR162:9, AR201:9, AR161:9, AR165:9, AR053:9, AR163:8, AR164:8, AR252:8, AR166:8, AR271:8, AR199:8, AR178:7, AR189:7, AR198:7, AR266:4, AR313:4, AR247:4, AR268:4, AR268:4, AR268:4, AR216:4, AR216:4, AR216:4, AR268:4, AR268:4, AR268:3, AR266:3, AR267:3, AR290:4, AR298:4, AR266:3, AR297:3, AR291:3, AR297:3, AR297:3, AR297:3, AR297:3, AR297:3, AR297:3, AR297:3, AR297:2, AR299:2, AR299:2, AR299:2, AR298:2, AR298:1, AR228:1, S0052:1 and L0366:1.	AR186:7, AR202:6, AR052:5, AR206:5, AR265:5, AR061:4, AR29:4, AR309:4, AR253:4, AR273:4, AR055:4, AR161:4, AR162:4, AR198:3, AR163:3, AR204:3, AR246:3, AR166:3, AR162:4, AR162:4, AR162:3, AR204:3, AR204:3, AR216:3, AR216:3, AR274:3, AR274:3, AR271:3, AR166:3, AR274:3, AR271:3, AR165:3, AR277:2, AR218:3, AR271:2, AR265:2, AR265:2, AR257:2, AR193:2, AR195:2, AR265:2, AR265:2, AR257:2, AR197:2, AR197:2, AR197:2, AR197:2, AR295:2, AR269:2, AR269:2, AR195:2, AR283:2, AR263:2, AR263:2, AR263:2, AR263:2, AR263:2, AR263:2, AR263:1, AR264:1, AR264:1, AR267:1, AR26	AR215:3, AR053:3, AR180:3, AR261:3, AR235:3, AR176:3, AR309:3, AR177:3, AR039:2, AR250:2, AR245:2, AR286:2, AR178:2, AR270:2, AR236:2, AR295:2, AR198:2, AR296:2, AR296:2, AR296:2, AR277:2, AR294:2, AR193:2, AR282:2, AR282:2, AR293:2, AR294:2, AR291:2, AR271:2, AR277:2, AR233:2, AR172:2, AR269:2, AR275:2, AR195:2, AR168:2, AR262:2, AR262:2, AR255:2, AR205:2, AR161:2, AR162:2, AR247:1, AR163:1, AR216:1, AR296:1, AR296:1, AR298:1, AR298:1, AR299:1, AR298:1, AR2	AR055:5, AR060:5, AR269:3, AR039:3, AR170:3, AR171:3, AR181:3, AR161:3, AR166:3, AR163:2, AR176:2, AR096:2, AR282:2, AR218:2, AR104:2, AR289:2, AR267:2, AR300:2, AR162:2, AR240:2, AR217:2, AR299:2, AR185:2, AR293:2, AR316:2, AR193:2, AR261:2, AR271:2, AR276:2, AR313:2,
369	370	371	372
408334	532619	597526	494246
HNOB T31	HNGDJ72	HNGDU40	HNGEG08
359	360	361	362

				1 AD2001 AD2001 AD2001 AD165:1 AD277:1
			•	
				AR295:1, AR230:1, AR173:1, AR172:1, AR219:1, AR297:1, AR229:1, AR312:1, AR233:1 S0052:1
363	HNGE029	532622	373	AR225:5, AR195:3, AR282:3, AR263:2, AR245:2, AR216:2, AR309:2, AR053:2, AR166:2, AR165:1, AR039:1, AR266:1, AR164:1, AR213:1, AR171:1, AR257:1, AR296:1, AR179:1, AR089:1, AR268:1,
				AR055:1, AR178:1, AR283:1, AR176:1, AR192:1, AR209:1, AR240:1, S0032:1
364	HNGEP09	499076	374	AR221:6, AR223:3, AR264:3, AR168:3, AR170:3, AR282:3, AR17 <i>2:2, AR257:2, AR297:2, AR240:1,</i>
				AR30012, AR1171, AR18011, AR08911, AR27711, AR18111, AR28311, AR17111 S0052:2
365	HNGHR74	553443	375	AR231:9, AR055:8, AR060:7, AR176:7, AR228:6, AR207:6, AR233:6, AR266:6, AR267:6, AR161:6,
3				AR162:6, AR182:5, AR163:5, AR309:5, AR269:5, AR253:5, AR216:5, AR181:5, AK236:3, AK103:3, AK1
				AR180:5, AR255:5, AR164:5, AR089:4, AR257:4, AR183:4, AR289:4, AR261:4, AR283:4,
				AK28/14, AR10014, AR25/14, AR0011, AR28813, AR18513, AR22513, AR28913, AR29113, AR30013,
				AR227-3 AR238:3. AR178:3. AR061:3, AR175:3, AR240:3, AR191:3, AR203:3, AR190:3, AR171:3,
				AR270:3, AR316:3, AR272:3, AR295:3, AR290:3, AR223:3, AR242:3, AR246:3, AR297:3, AR173:3,
				AR293:3, AR245:3, AR201:3, AR200:3, AR230:3, AR177:3, AR312:3, AR170:3, AR247:3, AR199:3,
				AR286:3. AR299:3. AR234:3, AR275:3, AR227:3, AR112:3, AR313:3, AR195:3, AR193:2, AR218:2,
				AR196:2, AR311:2, AR226:2, AR174:2, AR277:2, AR232:2, AR188:2, AR217:2, AR039:2, AR033:2,
				AR212:2, AR210:2, AR282:2, AR288:2, AR214:2, AR224:2, AR271:2, AR189:2, AR260:2, AR308:2,
				AR296:2, AR219:2, AR213:2, AR285:2, AR215:1, AR243:1, AR256:1, AR211:1, AR169:1 S0052:1 and
				S0216:1.
366	HNGIH43	410179	376	AR176:7, AR266:6, AR161:6, AR162:6, AR163:6, AR228:5, AR269:5, AR180:5, AR2223:3, AR271:5,
}				AR239:5, AR282:5, AR193:4, AR181:4, AR204:4, AR178:4, AR253:4, AR193:4, AR183:3-4, AR183:4, AR282:4,
				AR177:4, AR201:4, AR275:4, AR182:4, AR237:4, AR267:4, AR217:4, AR217:4, AR009:3, AR009:3,
		,		AR268:3, AR164:3, AR289:3, AR270:3, AR230:3, AR055:3, AR243:3, AR160:3, AR196:3, AR250:3,
				AR060:3, AR261:3, AR179:3, AR313:3, AR226:3, AR175:3, AR195:3, AR221:3, AR001:3, AR225:3,
				AR312:3, AR231:3, AR1/3:3, AR108:3, AR1/1:3, AR234:3, AR237:2, AR231:3, AR231:3 AR396:2
				AR316:2, AR291:2, AR286:2, AR172:2, AR263:2, AR295:4, AR287:2, AR163:2, AR311:2, AR29:2.
				AR246:2, AR174:2, AR285:2, AR300:2, AR288:2, AR005:2, AR174:2, AR202:1, AR2
				AR240:2, AR255:2, AR290:2, AR299:2, AR211:2, AR200:2, AR200:1, AR2
				AR190:1, AR236:1, AR191:1, AR264:1, AR247:1, AR212:1, AR235:1, AR277:1, AR104:1, AR150:1,
				AR210:1, AR189:1, AR170:1, AR260:1, AK216:1 HU038:2, HU010:2 and SU032.2.
367	HINGIJ31	519120	377	AR231:7, AR039:6, AR221:5, AR313:4, AR096:4, AK180:4, AR020::4, AR000::4, AR104::4, AR030:

				JAR162:4. AR163:4. AR275:4, AR183:4. AR089:3, AR205:3, AR300:3, AR272:3, AR246:3, AR274:3,
		•		AR225:3, AR269:3, AR181:3, AR299:3, AR165:3, AR164:3, AR166:3, AR175:3, AR173:3, AR191:3,
				AR198:3, AR277:3, AR185:3, AR270:3, AR182:3, AR240:3, AR033:3, AR316:3, AR176:2, AR267:2,
				AR261:2, AR204:2, AR266:2, AR257:2, AR291:2, AR216:2, AR218:2, AR264:2, AR214:2, AR219:2,
				AR222:2, AR224:2, AR195:2, AR189:2, AR190:2, AR201:2, AR283:2, AR288:2, AR196:2, AR309:2,
				AR179:2, AR285:2, AR211:2, AR290:2, AR265:2, AR296:2, AR282:2, AR172:2, AR178:2, AR293:2,
				AR193:2, AR226:2, AR233:1, AR199:1, AR312:1, AR234:1, AR228:1, AR247:1, AR230:1, AR061:1,
				AR255:1, AR188:1, AR238:1, AR287:1, AR268:1, AR236:1, AR217:1, AR258:1, AR262:1, AR174:1,
	•			AR295:1, AR192:1
368	HNGIQ46	526651	378	AR176:7, AR235:6, AR225:6, AR060:6, AR055:6, AR161:6, AR162:6, AR266:6, AR163:6, AR228:5,
	•			AR215:5, AR180:5, AR181:5, AR182:5, AR274:5, AR309:5, AR233:5, AR269:5, AR268:5, AR183:5,
				JAR214:5, AR236:4, AR252:4, AR290:4, AR261:4, AR239:4, AR172:4, AR177:4, AR257:4, AR267:4,
				AR275:4, AR264:4, AR229:4, AR178:4, AR255:4, AR175:4, AR270:4, AR173:4, AR262:4, AR288:4,
				AR198:4, AR237:4, AR179:3, AR185:3, AR165:3, AR293:3, AR271:3, AR291:3, AR164:3, AR166:3,
				AR223:3, AR294:3, AR300:3, AR287:3, AR299:3, AR196:3, AR240:3, AR297:3, AR188:3, AR231:3,
				AR295:3, AR089:3, AR286:3, AR234:3, AR230:3, AR061:3, AR191:3, AR174:3, AR226:3, AR221:3,
				[AR238:3, AR316:3, AR227:3, AR218:3, AR289:3, AR201:3, AR285:2, AR296:2, AR313:2, AR189:2,
				AR096:2, AR283:2, AR2 <i>17:</i> 2, AR247:2, AR200:2, AR190:2, AR217:2, AR232:2, AR207:2, AR263:2,
				AR312:2, AR199:2, AR168:2, AR203:2, AR193:2, AR224:2, AR104:2, AR311:2, AR260:2, AR039:2,
				AR258:2, AR171:2, AR216:2, AR033:2, AR282:2, AR272:2, AR219:2, AR222:2, AR210:2, AR256:1,
				AR205:1, AR204:1, AR195:1, AR1913:1, AR192:1 S0052:1
369	HNGJE50	561568	379	AR039:15, AR313:14, AR161:14, AR162:14, AR163:13, AR165:12, AR166:11, AR164:11, AR089:11,
				AR096:10, AR178:9, AR229:9, AR299:8, AR300:8, AR198:8, AR060:7, AR185:7, AR245:7, AR271:7,
				AR182:7, AR176:7, AR053:7, AR180:7, AR316:7, AR247:7, AR240:6, AR173:6, AR274:6, AR055:6,
				AR266:6, AR181:6, AR257:6, AR175:6, AR179:6, AR183:6, AR233:6, AR252:6, AR239:6, AR204:6,
				AR282:6, AR177:6, AR104:5, AR174:5, AR277:5, AR309:5, AR264:5, AR269:5, AR228:5, AR243:5,
				AR197:5, AR207:5, AR312:5, AR226:5, AR275:5, AR192:5, AR219:5, AR196:5, AR270:5, AR212:5,
				AR293:5, AR237:5, AR238:5, AR253:5, AR216:5, AR218:4, AR268:4, AR262:4, AR261:4, AR267:4,
				AR234:4, AR246:4, AR201:4, AR283:4, AR258:4, AR191:4, AR296:4, AR171:4, AR254:4, AR213:4,
				AR272:4, AR230:4, AR308:4, AR255:4, AR231:4, AR235:4, AR289:3, AR199:3, AR061:3, AR291:3,
				[AR297:3, AR286:3, AR288:3, AR205:3, AR222:3, AR263:3, AR227:3, AR193:3, AR200:3, AR214:3,
				AR290:3, AR033:3, AR294:3, AR203:3, AR256:2, AR295:2, AR285:2, AR232:2, AR287:2, AR189:2,
				AR195:2, AR224:2, AR225:2, AR216:2, AR188:2, AR311:2, AR260:2, AR190:2, AR242:2, AR210:1,
				AR172:1, AR170:1, AR211:1 S0052:1

HNGJP69 HNGJT54 HNGJT154
371

				AR291:4, AR316:4, AR258:4, AR239:4, AR053:4, AR296:4, AR228:4, AR174:4, AR250:4, AR199:4,
	•			AR096:3, AR192:3, AR230:3, AR237:3, AR196:3, AR193:3, AR234:3, AR283:3, AR104:3, AR203:3,
				AR190:3, AR272:3, AR260:3, AR253:3, AR189:3, AR061:3, AR185:3, AR311:3, AR275:3, AR226:3,
				/AR299:3, AR089:3, AR227:3, AR188:3, AR312:3, AR232:2, AR219:2, AR274:2, AR033:2, AR195:2, AR212:2, AR213:2, AR211:2, AR218:1, AR242:1, AR210:1, AR308:1
	HNGOI12	838184	768	
	HNGOI12	839283	692	
374	HNGOM56	836064	384	AR039:15, AR313:14, AR089:11, AR161:10, AR162:10, AR165:10, AR096:10, AR166:9, AR163:9, AR164:9, AR080: AR340:8, AR340:8
				AR180:6, AR055:6, AR104:6, AR181:6, AR176:6, AR309:6, AR173:6, AR053:6, AR196:6, AR179:6,
				AR183:6, AR197:6, AR175:6, AR229:6, AR240:6, AR182:6, AR174:5, AR247:5, AR264:5, AR198:5,
				AR245:5, AR177:5, AR233:5, AR262:5, AR275:5, AR204:5, AR269:5, AR261:5, AR243:5, AR218:5,
				AR226:5, AR271:4, AR239:4, AR171:4, AR238:4, AR228:4, AR236:4, AR246:4, AR193:4, AR237:4,
				AR257:4, AR212:4, AR283:4, AR234:4, AR293:4, AR217:4, AR272:4, AR221:4, AR312:4, AR268:4,
				AR270:4, AR258:4, AR263:4, AR219:4, AR267:4, AR266:4, AR308:4, AR170:4, AR199:4, AR231:4,
				AR201:4, AR200:4, AR191:4, AR195:3, AR230:3, AR252:3, AR291:3, AR203:3, AR253:3, AR274:3,
				AR188:3, AR205:3, AR189:3, AR296:3, AR061:3, AR294:3, AR297:3, AR227:3, AR235:3, AR215:3,
				AR311:3, AR232:3, AR289:3, AR288:3, AR255:3, AR213:3, AR287:3, AR295:3, AR286:2, AR033:2,
				AR250:2, AR285:2, AR216:2, AR222:2, AR260:2, AR290:2, AR214:2, AR256:2, AR169:2, AR168:2,
				AR224:2, AR190:2, AR210:2, AR211:1, AR172:1, AR223:1 S0428:2 and L0368:1.
375	HNHAH01	496115	385	AR198:6, AR309:6, AR161:6, AR162:6, AR163:6, AR266:6, AR181:5, AR228:5, AR176:5, AR267:5,
				AR183:5, AR201:5, AR233:5, AR236:5, AR165:4, AR177:4, AR269:4, AR182:4, AR164:4, AR204:4,
				AR261:4, AR229:4, AR238:4, AR166:4, AR272:4, AR178:4, AR275:4, AR225:4, AR180:4, AR270:4,
				AR239:4, AR237:4, AR263:4, AR246:4, AR235:4, AR293:4, AR257:4, AR060:4, AR061:4, AR312:4,
				AR200:4, AR055:4, AR299:4, AR268:4, AR171:4, AR195:4, AR231:4, AR247:3, AR224:3, AR283:3,
				AR089:3, AR255:3, AR289:3, AR243:3, AR226:3, AR313:3, AR264:3, AR096:3, AR179:3, AR286:3,
				[AR291:3, AR271:3, AR300:3, AR172:3, AR316:3, AR191:3, AR053:3, AR174:3, AR192:3, AR175:3,
				AR287:3, AR203:3, AR216:3, AR294:3, AR193:3, AR215:3, AR207:3, AR185:3, AR196:3,
				AR197:3, AR296:3, AR234:3, AR262:3, AR188:3, AR230:3, AR214:2, AR297:2, AR223:2, AR290:2,
				AR104:2, AR222:2, AR288:2, AR199:2, AR308:2, AR232:2, AR285:2, AR277:2, AR190:2, AR189:2,
				AR311:2, AR240:2, AR205:2, AR173:2, AR214:2, AR295:2, AR033:2, AR282:2, AR211:2, AR212:2,
				AR221:2, AR258:2, AR168:1, AR260:1, AR170:1, AR219:1, AR210:1, AR256:1, AR213:1, AR217:1
				80053:1
376	HNHCX60	520300	386	AR313:15, AR039:14, AR096:10, AR089:9, AR185:8, AR060:8, AR104:7, AR299:7, AR161:7, AR300:7,

				AR162-6 AR163-6 AR055-6 AR316-6 AR173-5 AR180-5 AR218-5, AR175-5, AR277-5, AR240-5,
				AR181:4. AR269:4, AR196:4, AR274:4, AR275:4, AR257:4, AR270:4, AR261:4, AR182:4, AR176:4,
				AR178:4, AR219:4, AR233:4, AR282:4, AR165:4, AR247:4, AR236:4, AR264:4, AR258:4, AR164:4,
				AR283:3, AR262:3, AR234:3, AR166:3, AR255:3, AR177:3, AR191:3, AR179:3, AR170:3, AR229:3,
				AR293:3, AR216:3, AR294:3, AR312:3, AR226:3, AR217:3, AR266:3, AR267:3, AR291:3, AR228:3,
				AR295:3, AR169:3, AR224:3, AR231:3, AR174:3, AR286:3, AR272:3, AR200:3, AR238:3, AR268:3,
				AR297:2, AR237:2, AR309:2, AR285:2, AR235:2, AR288:2, AR287:2, AR188:2, AR296:2, AR183:2,
				AR239:2, AR260:2, AR290:2, AR254:2, AR212:2, AR289:2, AR203:2, AR189:2, AR172:2, AR232:2,
				AR061:2, AR053:2, AR227:2, AR199:2, AR213:2, AR168:2, AR230:2, AR201:1, AR311:1, AR190:1,
				AR256:1, AR211:1, AR033:1 S0053:1
1777	HNHCY64	520294	387	AR039:33, AR313:26, AR096:17, AR089:17, AR299:15, AR104:10, AR277:10, AR060:10, AR185:9,
;				AR316:9, AR300:8, AR218:7, AR055:7, AR282:6, AR219:6, AR240:5, AR225:5, AR245:5, AR283:4,
				AR264:3, AR161:3, AR162:3, AR163:3, AR165:3, AR261:3, AR164:3, AR269:3, AR166:3, AR215:2,
				AR309.2. AR222.2. AR236.2. AR255.2. AR171:2, AR214:2, AR168:2, AR237:2, AR211:2, AR233:2,
				AR293.2. AR188:2. AR228:2. AR181:2. AR263:1, AR311:1, AR257:1, AR287:1, AR231:1, AR169:1,
				AR196:1, AR272:1, AR234:1, AR182:1, AR229:1, AR285:1, AR247:1, AR177:1, AR270:1, AR262:1,
				AR288:1. AR061:1. AR297:1, AR268:1, AR267:1, AR179:1 S0053:1
378	HNHCY94	\$20298	388	AR206: AR204:6, AR055:6, AR214:5, AR254:5, AR309:4, AR161:4, AR162:4, AR246:4, AR271:4,
3				AR163:4. AR039:4, AR089:4, AR176:4, AR164:4, AR165:4, AR197:4, AR283:4, AR201:3, AR166:3,
				AR104:3, AR245:3, AR224:3, AR313:3, AR096:3, AR253:3, AR282:3, AR185:3, AR299:3, AR198:3,
				AR207:3. AR316:3. AR300:2. AR177:2. AR311:2. AR311:2, AR261:2, AR274:2, AR218:2, AR240:2,
				AR061:2, AR266:2, AR243:2, AR053:2, AR275:2, AR255:2, AR228:2, AR195:2, AR237:2, AR289:2,
				AR242:2, AR229:2, AR288:2, AR183:2, AR205:2, AR174:2, AR238:2, AR179:2, AR199:2, AR168:2,
				AR171:2, AR226:2, AR312:2, AR193:2, AR267:1, AR263:1, AR272:1, AR239:1, AR308:1, AR233:1,
				AR231:1, AR232:1, AR211:1, AR234:1, AR277:1, AR236:1, AR293:1, AR225:1, AR287:1, AR268:1,
				AR216:1, AR257:1, AR291:1, AR190:1, AR290:1, AR252:1, AR286:1, AR269:1, AR294:1, AR247:1
				80053:1
379	HNHDW38	531908	389	<u> AR269:5, AR060:5, AR161:5, AR162:5, AR055:5, AR163:5, AR176:5, AR225:5, AR267:4, AR266:4,</u>
				AR263:4, AR228:4, AR233:4, AR178:4, AR214:4, AR309:4, AR221:4, AR182:4, AR181:4, AR257:4,
				AR179:4, AR264:4, AR165:4, AR183:4, AR231:4, AR239:4, AR237:4, AR236:3, AR164:3, AR262:3,
				AR300:3, AR177:3, AR271:3, AR294:3, AR229:3, AR166:3, AR272:3, AR255:3, AR299:3, AR275:3,
				AR172:3, AR234:3, AR195:3, AR215:3, AR173:3, AR240:3, AR166:3, AR169:3, AR168:3, AR213:3,
				AR185:3, AR268:3, AR291:3, AR311:3, AR270:3, AR201:3, AR175:3, AR288:3, AR261:3, AR061:3,
				AR293:3, AR230:3, AR089:3, AR296:3, AR053:3, AR290:3, AR200:3, AR199:3, AR283:3, AK316:3,

				ADOUT ADOUT ADOUT ADOUTE ADOUTE ADOUTE ADOUT ADOUT ADOUTE
				AK265'0, AK297'0, AK207'0, AK173'0, AK204'3, AK233'3, AK165'3, AK271'3, AK272'3, AK033'3, AK235'3, AK325'3, AK325'3, AK325'3, AK325'5, AK35'5'5, AK35'5'5'5'5'5'5'5'5'5'5'5'5'5'5'5'5'5'5'
				AR240:5, AR253:5, AR257:5, AR270:5, AR286:5, AR253:5, AR247:5, AR230:5, AR201:5, AR226:5, AR174:5, AR243:5, AR276:5, AR286:5, AR191:5, AR189:5, AR231:5, AR228:5, AR269:5,
n				AR205:5, AR173:5, AR233:5, AR210:5, AR227:5, AR229:5, AR199:5, AR267:4, AR185:4, AR277:4,
				AR294.4, AR061.4, AR239.4, AR316.4, AR089.4, AR274.4, AR218.4, AR262.4, AR200.4, AR232.4,
				AR234:4, AR290:4, AR211:4, AR238:4, AR190:4, AR256:4, AR179:4, AR226:4, AR260:4, AR039:4,
				AR188:4, AR299:4, AR203:4, AR230:4, AR283:3, AR096:3, AR104:3, AR242:3, AR313:3, AR219:3
				L0365:1 and S0216:1.
387	HNTBL27	545534	397	AR218:6, AR240:5, AR282:5, AR277:5, AR316:5, AR096:4, AR219:4, AR185:4, AR104:4, AR300:3,
_				AR299:3, AR060:3, AR283:3, AR055:3, AR313:3, AR089:3, AR039:3, L0794:3, L0663:2, S0360:1, H0042:1,
				H0253:1, H0150:1, H0633:1, S0142:1, H0538:1, L0804:1, L0790:1, L0791:1, L0666:1, L0664:1, L0665:1,
				H0519:1, L0747:1, L0749:1, L0779:1, L0777:1, L0755:1 and L0731:1.
388	HNTCE26	1160395	398	AR291:7, AR164:5, AR295:5, AR296:5, AR285:5, AR166:5, AR165:5, AR170:4, AR297:4, AR287:4,
				AR162:4, AR286:4, AR161:4, AR235:4, AR311:4, AR257:4, AR288:4, AR223:4, AR225:4, AR053:4,
				AR089:4, AR060:4, AR308:4, AR261:4, AR169:4, AR262:4, AR176:4, AR096:4, AR264:4, AR266:3,
				AR283:3, AR199:3, AR246:3, AR178:3, AR289:3, AR214:3, AR267:3, AR205:3, AR269:3, AR312:3,
				AR245:3, AR263:3, AR195:3, AR196:3, AR175:3, AR255:3, AR293:3, AR236:3, AR270:3, AR277:3,
				AR173:3, AR104:3, AR272:3, AR188:3, AR183:3, AR294:3, AR268:3, AR224:3, AR258:3, AR242:3,
				AR182:3, AR238:3, AR189:3, AR193:3, AR316:3, AR191:3, AR180:3, AR174:3, AR163:2, AR197:2,
				AR253:2, AR210:2, AR290:2, AR200:2, AR190:2, AR203:2, AR217:2, AR247:2, AR181:2, AR299:2,
				AR185:2, AR260:2, AR211:2, AR282:2, AR313:2, AR309:2, AR254:2, AR256:2, AR033:2, AR201:2,
				AR179:2, AR213:2, AR227:2, AR171:2, AR237:2, AR168:2, AR222:2, AR300:2, AR240:2, AR243:2,
				AR234:2, AR274:2, AR219:2, AR204:2, AR239:2, AR218:2, AR233:1, AR231:1, AR177:1, AR216:1,
				AR172:1, AR212:1, AR055:1, AR061:1, AR230:1, AR232:1, AR226:1 H0580:5, L0754:5, H0615:4,
				L0805:4, L0748:4, L0731:4, H0031:3, S0440:3, L0659:3, L0758:3, L2346:2, S0278:2, L0804:2, L0809:2,
				H0547:2, H0352:2, H0657:1, H0656:1, S0418:1, S0442:1, S0444:1, L3649:1, H0741:1, H0645:1, H0574:1,
				H0486:1, L3521:1, H0013:1, S0010:1, H0327:1, H0046:1, L0041:1, H0510:1, S0214:1, H0328:1, H0030:1,
				H0553:1, H0644:1, H0032:1, S0344:1, S0002:1, L0369:1, L0667:1, L0364:1, L0794:1, L0803:1, L0775:1,
				L0776:1, L0789:1, L0666:1, L0663:1, L2653:1, L0438:1, H0519:1, H0670:1, H0521:1, L0744:1, L0439:1,
				L0747:1, L0779:1, L0591:1 and L3374:1.
	HINTCE26	853373	774	
389	HNTNI01	1352285	399	AR207:15, AR263:12, AR169:11, AR311:11, AR212:10, AR198:10, AR264:10, AR235:10, AR252:9,
				AR168:9, AR223:9, AR224:9, AR089:9, AR053:8, AR215:8, AR172:8, AR161:8, AR162:8, AR214:8,
				AR222:8, AR163:8, AR309:8, AR165:8, AR205:8, AR192:8, AR164:8, AR170:8, AR221:7, AR166:7,

	т		_	
AR216:7, AR242:7, AR282:7, AR195:7, AR197:6, AR039:7, AR2113:7, AR261:7, AR312:7, AR245:6, AR242:6, AR225:6, AR033:6, AR197:6, AR288:6, AR217:6, AR060:5, AR196:5, AR245:6, AR295:6, AR225:6, AR291:5, AR197:6, AR288:6, AR217:6, AR060:5, AR196:5, AR274:5, AR296:5, AR246:5, AR246:5, AR246:5, AR291:5, AR193:5, AR299:5, AR176:4, AR296:4, AR291:5, AR293:4, AR287:4, AR286:4, AR286:4, AR313:4, AR108:4, AR296:4, AR296:4, AR297:4, AR296:4, AR297:4, AR296:4, AR296:3, AR177:4, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR198:3, AR198:3, AR298:3, AR298:3, AR198:3, AR298:3, AR		 DAR277:17, AR309:6, AR282:5, AR055:5, AR060:5, AR264:5, AR263:5, AR176:5, AR221:5, AR089:4, AR311:4, AR295:4, AR246:4, AR286:4, AR239:3, AR287:3, AR104:3, AR103:3, AR272:3, AR225:3, AR253:3, AR096:3, AR312:3, AR225:3, AR299:3, AR171:3, AR180:3, AR213:3, AR268:3, AR316:3, AR318:3, AR318:3, AR318:2, AR285:2, AR192:2, AR218:2, AR296:2, AR192:2, AR296:2, AR173:2, AR219:1, AR267:1, AR162:2, AR162:2, AR161:2, AR269:2, AR163:2, AR205:1, AR275:1, AR205:1, AR275:1, AR205:1, li> 		AR242:23, AR161:20, AR173:19, AR162:19, AR313:18, AR163:18, AR165:18, AR164:18, AR204:17, AR164:13, AR229:17, AR258:16, AR196:16, AR175:16, AR300:15, AR293:15, AR247:15, AR180:15, AR262:14, AR193:14, AR257:13, AR199:12, AR181:12, AR233:12, AR197:12, AR179:12, AR180:15, AR262:14, AR193:14, AR257:13, AR199:11, AR260:11, AR260:10, AR270:10, AR240:10, AR260:10, AR260:
	8 775		9/1 / 6/	401
	699848	1301202	518979	520201
	HNTN101	HOAAC90	HOAAC90	HOACB38
		390		391

				AR283:2, AR210:2, AR211:2, AR222:2, AR223:2, AR055:2, AR104:2, AR311:2, AR171:1, AR225:1,
				AK170:1 H0252:1
392	HOCNF19	835049	402	AR243:5, AR213:4, AR217:4, AR096:4, AR253:3, AR204:3, AR308:3, AR205:3, AR272:3, AR197:3,
				AR039:3, AR312:3, AR195:3, AR053:3, AR162:3, AR282:3, AR215:2, AR218:2, AR238:2, AR171:2,
				AR311:2, AR201:2, AR269:2, AR165:2, AR185:2, AR207:2, AR277:2, AR275:2, AR274:2, AR313:2,
				AR316:2, AR161:2, AR183:2, AR168:2, AR196:2, AR289:2, AR164:2, AR266:2, AR229:2, AR172:2,
				AR231:2, AR055:2, AR247:2, AR104:2, AR089:2, AR237:2, AR061:1, AR163:1, AR285:1, AR222:1,
				AR228:1, AR300:1, AR262:1, AR264:1, AR283:1, AR191:1, AR270:1, AR178:1, AR299:1, AR293:1,
				AR239:1, AR296:1, AR193:1, AR060:1, AR257:1, AR225:1, AR258:1, AR246:1, AR180:1, AR268:1
				S0442:2
393	HODDN65	520348	403	AR313:26, AR268:22, AR196:21, AR173:19, AR299:17, AR229:17, AR240:16, AR300:16, AR096:16,
				AR161:15, AR162:15, AR180:15, AR175:15, AR163:15, AR178:15, AR247:14, AR258:14, AR183:14,
				AR168:14, AR267:13, AR181:13, AR270:13, AR262:13, AR257:13, AR290:12, AR171:12, AR234:12,
				AR174:12, AR089:12, AR199:12, AR169:12, AR238:11, AR269:11, AR218:11, AR200:11, AR179:11,
				AR293:11, AR264:11, AR177:11, AR223:11, AR236:11, AR165:11, AR185:11, AR188:10, AR228:10,
				AR164:10, AR182:10, AR203:10, AR191:10, AR275:10, AR226:10, AR166:10, AR316:10, AR233:10,
				AR225:10, AR189:10, AR214:9, AR237:9, AR235:9, AR213:9, AR296:9, AR176:9, AR274:9, AR261:9,
				AR170:9, AR231:9, AR282:9, AR255:9, AR309:8, AR277:8, AR033:8, AR053:8, AR239:8, AR060:8,
				AR230:8, AR294:8, AR219:8, AR253:8, AR285:8, AR260:8, AR312:8, AR297:8, AR212:7, AR263:7,
				AR266:7, AR222:7, AR292:7, AR291:7, AR287:7, AR288:6, AR190:6, AR039:6, AR172:6, AR254:6,
				AR217:6, AR286:6, AR195:6, AR256:6, AR227:6, AR308:6, AR216:5, AR215:5, AR210:5, AR295:5,
				AR193:5, AR242:5, AR289:5, AR245:5, AR207:5, AR198:5, AR192:5, AR104:5, AR201:5, AR272:5,
				AR055:5, AR271:5, AR224:4, AR232:4, AR243:4, AR311:4, AR211:4, AR061:4, AR250:4, AR283:4,
				AR221:4, AR246:4, AR197:4, AR205:3, AR204:3 H0328:1
394	HODDN92	422913	404	AR161:4, AR162:4, AR163:4, AR192:4, AR165:4, AR308:4, AR264:4, AR176:4, AR311:3, AR164:3,
				AR309:3, AR166:3, AR312:3, AR213:3, AR214:3, AR193:3, AR225:3, AR313:3, AR096:3, AR089:3,
				AR270:3, AR172:3, AR235:3, AR299:2, AR201:2, AR291:2, AR104:2, AR269:2, AR195:2, AR294:2,
				AR169:2, AR215:2, AR290:2, AR224:2, AR173:2, AR060:2, AR288:2, AR285:2, AR285:2, AR271:2,
				AR185:2, AR175:2, AR039:2, AR275:2, AR277:2, AR211:2, AR268:2, AR316:2, AR190:2, AR267:2,
				AR274:2, AR272:2, AR171:2, AR287:2, AR221:2, AR237:2, AR189:1, AR289:1, AR217:1, AR300:1,
				[AR247:1, AR255:1, AR262:1, AR257:1, AR183:1, AR286:1, AR236:1, AR256:1, AR293:1, AR254:1,
				AR295:1, AR178:1, AR297:1, AR238:1, AR296:1, AR168:1 L0758:14, H0457:10, H0556:5, S0114:5,
				L0748:5, L0756:5, H0657:4, H0620:4, H0328:4, H0591:4, L0754:4, L0779:4, H0589:3, L0532:3, H0445:3,
				H0341:2, H0580:2, H0208:2, H0619:2, H0486:2, H0013:2, L0471:2, H0024:2, H0673:2, H0674:2, H0038:2,

				H0264:2, H0561:2, L0803:2, L0606:2, L0519:2, S0216:2, L0749:2, L0777:2, L0589:2, H0171:1, S0218:1, S0213:1, H0264:1, H0376:1, H0376:1, H0376:1, H0386:1, H0386:1, H0376:1, H0376:1, H0376:1, H0376:1, H0386:1, H03
				H0574:1. H0632:1. H0581:1. H0310:1. H0544:1, H0009:1, H0123:1, H0350:1, S0003:1, H0252:1, H0615:1,
				H0644:1, H0598:1, S0036:1, H0090:1, H0063:1, S0038:1, H0625:1, H0538:1, L0373:1, L0794:1, L0650:1,
				L0774:1, L0805:1, L0559:1, L0558:1, L0558:1, L0526:1, H0144:1, H0520:1, H0696:1, 30206:1, 30454:1, S0011:1, S0026:1, H0543:1 and H0423:1.
395	HODDO08	790333	405	AR272:19, AR218:19, AR291:18, AR219:17, AR039:15, AR253:13, AR285:13, AR180:13, AR096:13,
				AR313:12, AR089:10, AR287:10, AR197:10, AR176:10, AR255:10, AR185:9, AR269:9, AR245:9, AR262:9,
				AR240:9, AR243:9, AR205:9, AR192:9, AR165:9, AR183:9, AR164:9, AR295:8, AR270:8, AR242:8,
				AR193:8, AR254:8, AR166:8, AR296:8, AR173:8, AR177:8, AR266:8, AR178:8, AR300:8, AR316:8,
				AR175:8, AR212:8, AR162:8, AR053:7, AR204:7, AR258:7, AR198:7, AR161:7, AR163:7, AR293:7,
				AR286:7, AR299:7, AR268:7, AR247:7, AR060:7, AR188:7, AR288:7, AR182:7, AR246:7, AR250:7,
-				AR201:7, AR257:7, AR231:7, AR189:7, AR289:7, AR191:7, AR181:7, AR275:6, AR196:6, AR190:6,
				AR104:6, AR267:6, AR290:6, AR271:6, AR179:6, AR235:6, AR297:6, AR055:6, AR309:5, AR229:5,
				AR282:5, AR195:5, AR200:5, AR199:5, AR294:5, AR207:5, AR236:5, AR033:5, AR312:5, AR223:5,
				AR263:5, AR225:5, AR256:5, AR234:5, AR238:5, AR233:5, AR277:5, AR226:5, AR264:5, AR203:4,
				AR237:4, AR252:4, AR283:4, AR174:4, AR261:4, AR260:4, AR213:4, AR228:4, AR308:4, AR214:4,
				AR210:3, AR230:3, AR215:3, AR169:3, AR061:3, AR239:3, AR216:3, AR172:3, AR217:3, AR222:3,
				AR170:3, AR168:3, AR232:3, AR311:3, AR211:3, AR171:2, AR227:2, AR274:2, AR224:2 L0749:7,
				L0776:6, H0539:6, L0748:6, L0731:6, L0439:5, H0268:4, L0770:4, L0769:4, L0775:4, S0328:4, L0751:4,
				S0436:4, L0593:4, H0657:3, S0360:3, H0252:3, H0039:3, H0032:3, L0766:3, L0805:3, L0596:3, H0733:2,
				L0717:2, H0013:2, H0599:2, H0052:2, H0050:2, H0428:2, H0622:2, H0040:2, H0264:2, H0641:2, S0422:2,
				L0774:2, L0525:2, L0657:2, L0809:2, L0666:2, L0665:2, H0521:2, H0522:2, S0027:2, L0743:2, L0754:2,
				L0747:2, L0780:2, L0757:2, L0759:2, L0591:2, L0608:2, L0362:2, H0422:2, H0265:1, H0556:1, S0342:1,
				T0049:1, H0656:1, S0212:1, S0356:1, S0442:1, S0358:1, S0376:1, S0410:1, H0637:1, H0229:1, S0046:1,
				S0300:1, S0222:1, H0587:1, H0486:1, H0250:1, H0069:1, H0156:1, H0036:1, S0665:1, H0318:1, S0049:1,
				H0746;1, H0184;1, H0327;1, H0545;1, H0457;1, L0157;1, L0471;1, H0620;1, H0024;1, H0015;1, S0388;1,
				S6028:1, H0266:1, H0271:1, H0286:1, H0328:1, H0070:1, H0553:1, H0644:1, L0055:1, H0135:1, H0488:1,
				H0433:1, H0412:1, H0413:1, H0059:1, H0429:1, H0561:1, H0633:1, S0472:1, S0344:1, S0002:1, S0426:1,
				L0598:1, L0520:1, L0373:1, L0764:1, L0771:1, L0768:1, L0649:1, L0375:1, L0806:1, L0653:1, L0659:1,
				L0783:1, L0367:1, L0663:1, L2654:1, S0374:1, H0519:1, H0593:1, H0659:1, H0672:1, H0555:1, L0356:1,
				L0740:1, L0756:1, L0779:1, L0777:1, L0755:1, L0595:1, H0665:1 and S0196:1.
396	HODDW40	579256	406	AR171:9, AR223:8, AR172:7, AR168:7, AR235:7, AR313:6, AR214:6, AR161:6, AR162:6, AR264:6,
	•			JAR163:6, AR309:6, AR291:6, AR270:6, AR060:6, AR165:5, AR311:5, AR164:5, AR039:5, AR245:5,

				AR055:5, AR096:5, AR263:5, AR166:5, AR296:5, AR089:5, AR271:5, AR308:5, AR053:5, AR178:4,
				JAR275:4, AR312:4, AR180:4, AR176:4, AR213:4, AR197:4, AR274:4, AR299:4, AR269:4, AR175:4,
				AR297:4, AR295:4, AR182:4, AR285:4, AR225:4, AR282:4, AR170:4, AR250:4, AR217:4, AR316:3,
				[AR268:3, AR173:3, AR238:3, AR272:3, AR224:3, AR286:3, AR246:3, AR266:3, AR183:3, AR293:3,
				[AR290:3, AR215:3, AR288:3, AR277:3, AR193:3, AR185:3, AR236:3, AR239:3, AR240:3, AR231:3,
				[AR229:3, AR300:3, AR287:3, AR216:3, AR289:3, AR226:3, AR294:3, AR201:2, AR267:2, AR232:2,
				JAR283:2, AR205:2, AR219:2, AR104:2, AR207:2, AR181:2, AR195:2, AR228:2, AR237:2, AR230:2,
			_	AR210:2, AR260:2, AR255:2, AR212:2, AR256:2, AR218:1, AR179:1, AR033:1, AR227:1, AR211:1,
				AR252:1, AR233:1, AR203:1, AR196:1, AR234:1 H0040:3, H0739:1, H0645:1, H0328:1, H0519:1 and
		_		H0436.1.
397	HODFN71	1194866	407	AR282:12, AR176:8, AR162:6, AR163:5, AR170:5, AR161:5, AR266:5, AR182:5, AR181:5, AR055:5,
				JAR228:4, AR060:4, AR204:4, AR269:4, AR239:4, AR264:4, AR233:4, AR268:4, AR229:4, AR236:4,
				AR177:4, AR309:4, AR267:4, AR257:3, AR197:3, AR225:3, AR224:3, AR253:3, AR222:3, AR201:3,
				AR165:3, AR242:3, AR289:3, AR193:3, AR183:3, AR270:3, AR274:3, AR237:3, AR179:3, AR217:3,
				AR196:3, AR272:3, AR166:3, AR207:3, AR164:3, AR235:3, AR185:3, AR300:3, AR180:3, AR293:3,
				[AR290:3, AR286:3, AR311:3, AR255:3, AR238:3, AR171:3, AR299:3, AR089:3, AR247:3, AR188:3,
				[AR261:3, AR287:3, AR234:3, AR291:3, AR200:3, AR175:2, AR061:2, AR294:2, AR295:2, AR203:2,
				AR283:2, AR316:2, AR262:2, AR214:2, AR191:2, AR190:2, AR271:2, AR297:2, AR178:2, AR231:2,
				AR227:2, AR104:2, AR288:2, AR277:2, AR285:2, AR243:2, AR226:2, AR039:2, AR096:2, AR296:2,
				AR232:2, AR312:2, AR173:2, AR260:2, AR053:2, AR168:2, AR313:2, AR230:2, AR210:1, AR258:1,
			_	AR213:1, AR174:1, AR215:1, AR218:1, AR033:1, AR240:1, AR256:1, AR308:1, AR189:1, AR252:1,
				AR211:1 H0615:2 and H0624:1.
	HODFN71	834999	777	
398	HODGE68	834907	408	AR161:8, AR162:8, AR163:8, AR313:7, AR039:6, AR173:6, AR180:6, AR176:6, AR182:6, AR242:6,
				AR060:6, AR055:6, AR270:5, AR181:5, AR236:5, AR293:5, AR309:5, AR240:5, AR096:5, AR175:5,
				AR165:5, AR300:5, AR282:5, AR089:5, AR053:5, AR204:5, AR185:5, AR275:5, AR233:5, AR164:5,
				AR269:5, AR261:5, AR177:5, AR257:5, AR178:5, AR229:5, AR196:5, AR166:5, AR264:4, AR179:4,
				AR201:4, AR228:4, AR262:4, AR299:4, AR294:4, AR231:4, AR274:4, AR247:4, AR183:4, AR174:4,
				AR191:4, AR255:4, AR266:4, AR198:4, AR316:4, AR271:4, AR238:4, AR287:4, AR218:4, AR239:4,
				AR277:4, AR230:4, AR288:4, AR267:4, AR212:4, AR237:4, AR268:4, AR258:4, AR199:4, AR297:4,
				[AR234:4, AR104:3, AR197:3, AR263:3, AR295:3, AR311:3, AR168:3, AR226:3, AR170:3, AR219:3,
				AR285:3, AR296:3, AR312:3, AR250:3, AR188:3, AR290:3, AR291:3, AR203:3, AR283:3, AR272:3,
				AR217:3, AR286:3, AR190:3, AR289:3, AR214:3, AR225:3, AR260:3, AR207:3, AR033:3, AR245:3,
				AR195:3, AR061:3, AR223:3, AR216:2, AR189:2, AR200:2, AR171:2, AR227:2, AR254:2, AR232:2,

				AP33.3. AP313.3 AP313.3 AP311.3 AP310.3 AP356.1 AR169:1, AR346:1, AR308:1, AR252:1,
	_			AR215:1 AR224:1 H0615:1
390	HOFBK34	768325	409	AR055:5, AR060:3, AR225:3, AR169:3, AR246:2, AR272:2, AR207:2, AR163:2, AR162:2, AR089:2,
ì				AR291:2, AR039:2, AR193:2, AR271:2, AR266:2, AR217:2, AR218:2, AR168:2, AR161:2, AR283:1,
				AR263:1, AR289:1, AR240:1, AR264:1, AR096:1, AR243:1, AR257:1, AR255:1, AR316:1, AK104:1,
				AR166:1, AR185:1, AR230:1, AR300:1 L0803:2, S0126:2, S0250:1, S0438:1 and L0774:1.
	HOEBK34	156605	778	F.351GA F.151GA F. Store C. Store C. Store A. A. D.165.7
400	HOEBZ89	828177	410	AR313:16, AR039:13, AR089:10, AR096:9, AR299:9, AR166:8, AR229:1, AR312:1, AR101:1, AR103:1, AR103:1, AR316:1, AR103:1, AR316:5, AR238:6, AR164:6, AR163:6, AR252:6, AR060:6, AR316:5, AR226:5,
				AR257:5, AR242:5, AR225:5, AR204:5, AR192:5, AR185:5, AR277:5, AR247:5, AR293:5, AR198:4,
				AR286:4, AR269:4, AR055:4, AR264:4, AR205:4, AR237:4, AR240:4, AR219:4, AR266:4, AR212:4,
				AR176:4, AR294:4, AR296:4, AR213:4, AR207:4, AR297:4, AR218:4, AR262:4, AR234:4, AR308:3,
				AR243:3, AR233:3, AR268:3, AR263:3, AR230:3, AR288:3, AR191:3, AR261:3, AR239:3, AR181:3,
				AR274:3, AR270:3, AR267:3, AR177:3, AR282:3, AR309:3, AR170:3, AR275:3, AR174:3,
				AR183:3. AR180:3. AR178:3, AR196:2, AR227:2, AR228:2, AR311:2, AR283:2, AR203:2, AR295:2,
				AR053:2. AR231:2. AR258:2. AR182:2, AR255:2, AR232:2, AR172:2, AR173:2, AR199:2, AR250:2,
				AR271:2, AR189:2, AR179:2, AR246:2, AR236:2, AR195:2, AR169:2, AR272:2, AR200:2, AR290:2,
				AR175:2, AR193:2, AR061:2, AR188:2, AR289:2, AR224:2, AR235:2, AR216:2, AR215:2, AR197:2,
				AR223:1, AR190:1, AR287:1, AR291:1, AR217:1, AR260:1, AR222:1, AR033:1 L0749:11, L0748:8,
				S0360:3, S0408:3, L0646:3, L0764:3, S0354:2, L0777:2, H0556:1, S0358:1, S0444:1, H0580:1, H0486:1,
				L0022:1, H0687:1, H0561:1, L0800:1, L0643:1, L0654:1, L0807:1, L0789:1, L0663:1, T0068:1, S0126:1,
				H0521:1, H0522:1, L0750:1, L0779:1, H0542:1 and H0506:1.
401	HOEDB32	634994	411	L0807:6, L0747:5, S0126:4, L0779:4, L0771:3, H0696:3, L0740:3, L0750:3, S0358:2, S0222:2, L0471:2,
: :				L0772:2, L0662:2, L0774:2, L0809:2, H0690:2, H0670:2, S0378:2, L0439:2, L0755:2, L0757:2, L0362:2,
				T0049:1, S0180:1, S0212:1, H0662:1, S0442:1, S0360:1, H0722:1, H0208:1, H0486:1, T0039:1, 10040:1,
				L2637:1, L0021:1, H0327:1, H0546:1, H0545:1, H0123:1, H0012:1, H0620:1, H0684:1, H0685:1, H0685:1,
				H0551:1. H0413:1, T0042:1, L0065:1, S0150:1, L0637:1, L0646:1, L0363:1, L0649:1, L0775:1, L0806:1,
				L0652;1, L0661:1, L0657:1, L0647:1, L0793:1, L0663:1, L0664:1, L0708:1, L2651:1, H0144:1, S0374:1,
				80148:1, H0547:1, H0519:1, H0539:1, S0152:1, S0406:1, S0028:1, L0745:1, L0756:1, L0780:1, L0759:1,
				S0434:1, S0436:1, L0361:1, S0194:1 and H0352:1.
402	HOEDE28	1036480	412	AR242:70, AR192:63, AR313:60, AR173:49, AR229:48, AR196:44, AR300:44, AR218:43, AR175:41,
!				[AR236:40, AR177:39, AR183:38, AR181:38, AR178:38, AR180:37, AR240:36, AR258:36, AR262:36,
				AR039:35, AR247:35, AR089:35, AR193:34, AR204:33, AR198:33, AR257:33, AR191:32, AR200:32,
				AR174:32, AR234:31, AR096:31, AR199:30, AR299:30, AR102:30, AR102:30, AR100:25, AR101:25,

				AR293:28, AR164:28, AR163:28, AR179:28, AR233:27, AR238:27, AR197:27, AR219:27, AR203:27, AR261:27, AR263:27,
				AR166:24, AR296:24, AR189:23, AR264:23, AR230:23, AR316:23, AR294:23, AR297:23, AR271:22,
		-		AR260:21, AR243:21, AR207:21, AR237:21, AR235:21, AR231:20, AR176:20, AR312:20, AR295:20,
				[AR268:19, AR060:19, AR267:19, AR286:18, AR275:18, AR255:18, AR228:18, AR287:17, AR053:17,
				AK2//:17, AK201:17, AK212:17, AK288:13, AK190:13, AK230:13, AK309:13, AK213:14, AK224:14, AK2309:14, AK234:14
				AR262:14, AR2/4:14, AR255:13, AR053:13, AR205:13, AR22/1:13, AR290:12, AR21:12, AR265:11, AR266:11, AR266:11, AR232:10, AR211:31, AR266:11, AR232:10, AR311:31, AR308:10, AR308:10, AR308:10, AR310:31, AR310:
				AR253:9, AR263:8, AR055:7, AR283:6, AR061:6, AR168:5, AR272:4, AR216:4, AR215:4, AR217:4,
				AR225:4, AR222:4, AR214:3, AR172:3, AR171:3, AR224:2 H0620:17, H0012:10, H0250:9, L0748:8,
				S0360:6, L0659:6, L0744:5, H0622:4, H0494:4, L0775:4, L0751:4, L0779:4, S0132:3, S0476:3, H0024:3,
				H0188:3, H0424:3, H0674:3, H0264:3, L0666:3, L0665:3, H0144:3, S0126:3, S0380:3, L0777:3, H0556:2,
				H0650:2, L0005:2, S0356:2, S0376:2, H0587:2, H0575:2, H0046:2, L0157:2, H0050:2, L0372:2, L0764:2,
				L0806:2, L5623:2, L0663:2, L0664:2, H0658:2, S0328:2, S0152:2, L0743:2, L0731:2, S0436:2, L0587:2,
				L0603:2, H0170:1, S0001:1, S0442:1, S0358:1, H0741:1, H0549:1, H0550:1, S6014:1, H0441:1, H0574:1,
				H0486:1, T0109:1, H0427:1, H0036:1, H0618:1, S0010:1, H0052:1, T0103:1, S0051:1, H0266:1, H0292:1,
				H0284:1, S0250:1, H0328:1, T0023:1, L0483:1, H0553:1, H0616:1, H0087:1, H0488:1, L0564:1, L0763:1,
				L0770:1, L0769:1, L0644:1, L0771:1, L0648:1, L0662:1, L0768:1, L0766:1, L0650:1, L0774:1, L0776:1,
				L0655:1, L0807:1, H0593:1, H0670:1, H0660:1, H0648:1, H0696:1, S0146:1, S0406:1, S0434:1, L0599:1,
				S0194:1 and S0456:1.
	HOEDE28	900015	611	
403	HOEDH84	748236	413	AR170:4, AR221:3, AR266:3, AR033:3, AR296:3, AR176:3, AR311:2, AR183:2, AR180:2, AR286:2,
				AR233:2, AR204:2, AR232:2, AR257:1, AR216:1, AR291:1, AR300:1, AR255:1, AR172:1, AR283:1,
				AR299:1, AR225:1, AR270:1 S0126:3, L0731:2, S0040:1, S0356:1, H0370:1, H0031:1 and H0633:1.
404	НОЕМОЗЗ	1184465	414	AR205:90, AR212:77, AR245:75, AR274:68, AR272:67, AR216:65, AR246:62, AR252:60, AR308:59,
				AR213:59, AR214:55, AR312:54, AR215:54, AR197:50, AR309:50, AR254:50, AR053:50, AR217:49,
				AR171:49, AR221:49, AR195:48, AR311:45, AR225:45, AR223:44, AR264:44, AR170:44, AR189:44,
				AR199:43, AR210:43, AR263:43, AR168:43, AR247:43, AR243:41, AR224:41, AR172:41, AR253:40,
				[AR222:40, AR169:39, AR164:37, AR250:37, AR174:37, AR271:36, AR166:36, AR198:36, AR165:36,
				AR201:34, AR188:34, AR162:34, AR190:32, AR163:32, AR242:32, AR161:32, AR204:29, AR193:28,
				AR173:27, AR192:26, AR313:26, AR236:25, AR291:24, AR177:24, AR275:24, AR290:24, AR256:23,
				AR039:22, AR262:22, AR096:22, AR191:22, AR240:22, AR219:22, AR200:22, AR185:22, AR179:21,
				AR218:21, AR089:21, AR211:20, AR300:20, AR288:20, AR175:20, AR297:20, AR289:20, AR295:19,
				AR255:19, AR261:19, AR299:19, AR203:19, AR207:19, AR293:18, AR196:18, AR268:17, AR237:17,

				AR296:17, AR258:17, AR282:16, AR316:16, AR285:16, AR231:15, AR269:15, AR257:15, AR178:14, AR234:14, AR287:14, AR181:14, AR230:14, AR233:14, AR230:14, AR233:14, AR230:14, AR300:14, AR300:
				AR239:14, AR183:13, AR266:13, AR270:13, AR229:13, AR286:13, AR277:12, AR180:12, AR060:12, AR238:12, AR238:12, AR238:12, AR182:8,
				AR104:7, AR055:5 H0415:1
	НОРМОЗЗ	968616	780	
	HOFMQ33	906694	781	
	HOFMQ33	902639	782	
	HOFMQ33	702186	783	
405	HOFMT75	911180	415	AR192.4, AR225.3, AR217.2, AR235.2, AR1712.2, AR183.2, AR183.2, AR168.2, AR266:2,
				AR170:1, AR309:1, AR193:1, AR180:1, AR210:1, AR29:1, AR29:1, AR300:1, AR300
				S0358:1, H0318:1, H0045:1, H0264:1, S0144:1, H0555:1 and L0741:1.
	HOFMT75	905365	784	
	HOFMT75	892308	785	
	HOFMT75	892291	786	
406	HOFNC14	1352378	416	AR263:5, AR171:4, AR213:4, AR282:4, AR205:3, AR169:3, AR235:3, AR246:3, AR162:2, AR161:2,
				AR180.2, AR221:2, AR178:2, AR176:2, AR245:2, AR287:2, AR183:2, AR163:2, AR311:2, AR089:1,
				JAR309:1, AR264:1, AR104:1, AR191:1, AR191:1, AR230:1, H0415:1
	HOFNC14	899292	787	
407	HOFND85	847424	417	AR165:3, AR162:3, AR170:3, AR241:3, AR221:2, AR171:2, AR169:2, AR269:2, AR201:2, AR193:2,
				JAK164:2, AK166:2, AK212:2, AK212:2, AK160:2, AK210:2, AK175:2, AK275:1, AK250:2; AK276:1, AK166:1, AK166:1, AK166:2, AK246:2, AK169:1, AK166:1, AK
				AR163:1, AR089:1, AR183:1, AR283:1, AR288:1
408	HOFNY91	847425	418	AR215:17, AR221:11, AR225:11, AR291:10, AR217:10, AR165:9, AR216:9, AR189:8, AR231:8, AR166:8,
				AR169:7, AR296:7, AR285:7, AR250:7, AR223:7, AR191:6, AR210:6, AR234:6, AR288:6,
				AR264:6, AR168:6, AR214:6, AR171:6, AR275:6, AR257:9, AR190:6, AR103:0, AR103:0, AR104:0, AR1
				AR238:5, AR227:5, AR175:5, AR180:5, AR290:5, AR222::5, AR200:5, AR211:5, AR228:4, AR195:4,
				AR224:4, AR237:4, AR188:4, AR258:4, AR170:4, AR272:4, AR172:3, AR247:3, AR179:3, AR035:3,
				AR282:3, AR316:3, AR247:3, AR240:3, AR197:3, AR289:3, AR262:3, AR239:3, AR219:3, AR060:3,
				AR096:3, AR286:3, AR061:3, AR300:2, AR313:2, AR263:2, AR269:2, AR033:2, AR185:2, AR308:2,
				AR173:2, AR229:2, AR287:2, AR299:2, AR295:2, AR236:2, AR260:2, AR255:1, AR226:1, AR293:1,
				AR164:1, AR212:1, AR297:1, AR104:1, AR232:1, AR2/4:1, AR102:1, AR2/0:1, AR210:1, AR107:1,

				AR312:1, AR178:1, AR266:1, AR196:1 L0803:8, H0341:6, L0771:6, L0766:6, H0521:6, L0731:6, S0354:5,
				L0770.5, H0519.5, L0439.5, L0754.5, H0009.4, S0422.4, L0800.4, L0521.4, L0662.4, L0805.4, L0438.4,
				\$0028:4, L0758:4, \$0436:4, L0485:4, L0601:4, H0657:3, H0638:3, \$0418:3, H0733:3, \$0007:3, \$0222:3,
				L3655:3, S0214:3, H0673:3, L0794:3, L0776:3, L0809:3, L3391:3, H0144:3, H0670:3, S0406:3, L0756:3,
				H0667:3, S0420:2, S0358:2, S0360:2, H0729:2, S0476:2, H0645:2, S0300:2, L2543:2, H0156:2, S0010:2,
				H0178:2, H0375:2, S6028:2, H0266:2, S0003:2, H0428:2, H0169:2, S0036:2, H0634:2, H0529:2, L0369:2,
				L0640:2, L0637:2, L0761:2, L0646:2, L0649:2, L0774:2, L0775:2, L0807:2, L0659:2, L0783:2, L5622:2,
				L0666:2, L0665:2, L2653:2, L2264:2, H0725:2, L3827:2, H0547:2, H0435:2, H0659:2, S0380:2, S3014:2,
-				S0206:2, L0752:2, L0759:2, S0434:2, L0596:2, H0668:2, H0170:1, H0556:1, S0342:1, H0713:1, H0717:1,
				H0716:1, H0294:1, L2877:1, T0049:1, S0218:1, L2910:1, L2915:1, L2991:1, S0282:1, S0400:1, L2289:1,
				H0241:1, H0402:1, L0534:1, L0539:1, S0376:1, S0444:1, S0410:1, H0728:1, H0734:1, H0229:1, S0045:1,
				H0749:1, S6026:1, H0406:1, S0220:1, H0441:1, H041S:1, H0438:1, H0362:1, H0333:1, H0574:1, H0486:1,
				L1819:1, T0060:1, H0013:1, H0427:1, H0599:1, H0575:1, H0318:1, S0474:1, H0581:1, H0374:1, H0085:1,
				T0110:1, H0150:1, H0563:1, S0388:1, S0051:1, H0687:1, H0039:1, H0030:1, H0553:1, H0644:1, H0628:1,
				H0166:1, L0455:1, H0708:1, S0366:1, H0090:1, H0591:1, H0038:1, H0551:1, H0380:1, H0623:1, S0386:1,
				T0042:1, H0494:1, H0561:1, S0370:1, H0509:1, H0130:1, H0641:1, L0598:1, L0769:1, L0638:1, L0796:1,
				L0667:1, L0630:1, L0373:1, L0641:1, L0773:1, L5569:1, L5574:1, L0381:1, L0806:1, L0661:1, L0527:1,
				L0518:1, L5623:1, L0789:1, L0790:1, L0793:1, L0710:1, L2262:1, L2380:1, L2412:1, S0374:1, H0520:1,
				\$0126:1, H0648:1, H0522:1, H0555:1, S0392:1, S3012:1, L0742:1, L0749:1, L0777:1, L0753:1, L0755:1,
				L0757:1, L0366:1, S0026:1, S0276:1, S0196:1, H0542:1, H0543:1, L3357:1 and L3372:1.
409	НОГОСЗЗ	1186156	419	AR214:243, AR223:206, AR222:175, AR217:161, AR272:140, AR216:132, AR224:119, AR225:118,
				AR172:112, AR274:111, AR173:108, AR247:105, AR169:105, AR168:100, AR171:99, AR308:98, AR215:97,
				[AR311:94, AR170:91, AR312:88, AR309:86, AR183:86, AR270:83, AR267:76, AR264:70, AR221:68,
				[AR176:65, AR166:61, AR212:59, AR245:58, AR161:58, AR263:56, AR213:55, AR162:52, AR165:52,
				AR275:52, AR271:51, AR205:51, AR164:50, AR174:49, AR268:49, AR266:48, AR053:48, AR061:47,
				AR163:46, AR260:45, AR269:43, AR296:43, AR177:41, AR254:40, AR179:38, AR313:37, AR293:37,
				[AR240:36, AR104:35, AR231:32, AR185:32, AR297:32, AR234:29, AR238:29, AR181:28, AR300:28,
				JAR258:27, AR285:26, AR289:26, AR243:25, AR316:25, AR255:24, AR290:24, AR239:24, AR246:24,
				AR291:23, AR277:23, AR210:23, AR294:22, AR211:22, AR261:21, AR262:21, AR282:21, AR235:21,
				AR178:21, AR287:20, AR201:20, AR295:20, AR197:19, AR189:19, AR230:19, AR199:18, AR226:18,
				AR175:18, AR198:18, AR242:18, AR233:17, AR299:17, AR283:17, AR236:17, AR096:17, AR232:17,
_				AR288:16, AR227:16, AR253:16, AR039:16, AR250:15, AR207:15, AR204:15, AR192:15, AR190:15,
		_		AR229:14, AR089:13, AR180:13, AR195:13, AR286:13, AR257:12, AR188:12, AR237:12, AR203:11,
				AR219:11, AR200:11, AR055:11, AR193:11, AR182:10, AR228:9, AR196:9, AR256:9, AR218:9, AR191:8,

410	HOFOC33 HOFOC33 HOFOC33 HOFOC33 HOFOC33 HOGCK20	967554 878690 905734 902326 885140 806819 745445	788 790 791 793 793 4420	AR035:7, AR060:6, AR232:4 H0415:3 and H0414:2. AR055:8, AR238:7, AR239:6, AR273:5, AR183:5, AR218:5, AR219:5, AR096:5, AR184:5, AR269:5, AR266:4, AR266:4, AR269:4,
				L0372:1, L0646:1, L0800:1, L0374:1, L0764:1, L0363:1, L0766:1, L0649:1, L0381:1, L0375:1, L0657:1, L0493:1, L0365:1, L0636:1, L0663:1, L0664:1, L4560:1, L3871:1, L2257:1, L2263:1, L2260:1, L2262:1, H0144:1, L0438:1, L2702:1, H0547:1, H0689:1, H0690:1, H0658:1, H0660:1, R0380:1, S0152:1, S0188:1, S0027:1, L0742:1, L0742:1, L0742:1, L0742:1, L0743:1, L0588:1, L0608:1, H0665:1, S0192:1, S0242:1, H0543:1,

				S0460:1 and L3561:1.
	HOGCK20	664499	794	
411	HOGCK63		421	AR253;8, AR263:7, AR253:7, AR170:7, AR214:7, AR169:7, AR171:7, AR245:6, AR197:6, AR195:6, AR203:5, AR203:5, AR203:5, AR172:5, AR168:5, AR240:5, AR205:5, AR205:4, AR217:4, AR205:4, AR215:4, AR205:3, AR206:3, AR206:2, AR2
	HOGCK63	902295	35	
412	HOGCS52	868616	422	AR214:124, AR216:116, AR217:83, AR223:82, AR174:78, AR222:78, AR169:74, AR171:73, AR205:72, AR215:71, AR222:71, AR222:70, AR274:69, AR168:69, AR245:67, AR272:67, AR210:67, AR247:66, AR212:66, AR179:65, AR199:60, AR172:60, AR170:59, AR221:59, AR218:59, AR213:58, AR313:58, AR189:57, AR246:57, AR188:55, AR165:54, AR096:52, AR236:52, AR164:51, AR219:50, AR039:49, AR312:49, AR089:49, AR173:49, AR291:48, AR166:48, AR190:47, AR271:46, AR183:44, AR240:43, AR053:43, AR316:42, AR211:41, AR311:41, AR296:41, AR252:41, AR185:41, AR175:40, AR290:40, AR300:40, AR163:40, AR161:39, AR162:39, AR308:39, AR177:38, AR178:38, AR191:38,

AR18231, AR26031, AR26231, AR27731, AR27330, AR20330, AR28529, AR26252, AR29728, AR29723, AR29723, AR29727, AR29727, AR29727, AR29723, AR2
--

				AR243:2, AR168:2, AR218:2, AR246:2, AR274:2, AR297:2, AR182:2, AR239:2, AR290:2, AR061:2, AR033:2, AR283:2, AR237:2, AR268:2, AR309:2, AR231:2, AR225:2, AR210:2, AR250:2, AR211:2, AR266:2, AR171:2, AR256:2, AR210:2, AR216:1, AR197:1, S0250:1, and S0011:1.
414	нонвс68	603968	424	AR207:10, AR277:8, AR252:7, AR223:7, AR214:6, AR224:6, AR165:6, AR166:6, AR168:6, AR266:3:6, AR166:6, AR192:5, AR264:5, AR266:5, AR216:5, AR216:5, AR161:5, AR161:5, AR162:5, AR162:5, AR264:5, AR264:5, AR266:5, AR216:5, AR216:5, AR161:5, AR162:5, AR163:4, AR264:4, AR283:4, AR283:4, AR262:4, AR282:4, AR262:4, AR262:3, AR262:2,
415	HOHBY12	625973	425	AR222:198, AR215:322, AR215:287, AR216:269, AR223:260, AR308:259, AR311:230, AR217:200, AR222:198, AR211:192, AR210:191, AR172:189, AR166:175, AR272:173, AR212:172, AR224:160, AR274:154, AR170:151, AR264:144, AR171:143, AR168:140, AR245:137, AR242:131, AR173:129, AR274:154, AR167:127, AR169:124, AR167:119, AR218:119, AR245:137, AR242:131, AR173:129, AR167:123, AR164:112, AR264:144, AR167:193, AR165:119, AR218:113, AR164:112, AR213:104, AR312:103, AR186:103, AR188:114, AR309:113, AR164:112, AR213:104, AR312:103, AR180:93, AR189:103, AR178:103, AR174:102, AR205:99, AR191:98, AR162:97, AR312:103, AR266:103, AR180:93, AR161:93, AR163:86, AR205:99, AR219:82, AR265:64, AR266:64, AR266:64, AR266:64, AR266:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:65, AR277:45, AR277:65, AR277:45, AR287:49, AR175:52, AR177:50, AR099:63, AR287:49, AR192:47, AR298:33, AR033:33, AR236:40, AR239:40, AR266:26, AR236:34, AR236:24, AR236:34, AR236:34, AR236:34, AR236:34, AR236:24, AR236:24, AR236:24, AR238:24, AR288:23, AR288:24, AR288:24, AR288:20, AR288:24, AR288:24, AR288:21, AR288:22, AR188:2, AR288:22, AR188:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR288:2, AR288:2, AR288:2, AR288:2, AR288:2, AR188:2, AR288:2, AR88:2, AR888:2, AR888:2, AR888:2, AR888:2, AR888:2, AR888:2, AR888:2, AR888:2, A
416	нонсс74	547977	426	AR060:8, AR188:7, AR181:7, AR161:7, AR185:7, AR182:6, AR294:6, AR104:6, AR291:6, AR296:6, AR285:6, AR232:5, AR288:5, AR055:5, AR229:5, AR226:4, AR089:4, AR162:4, AR175:4, AR289:4,

				100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
				AR236:4, AR253:4, AR270:4, AR176:4, AR235:4, AR115:4, AR170:4, AR105:5, AR312:5, AR300:2, AR300:2, AR371:3, AR373:4, AR378:3, AR3
				AR1(1:5), AR1(9:2), AR189:2, AR290:2, AR096:2, AR297:2, AR222:2, AR308:2, AR268:2, AR282:2,
				AR313:2, AR277:2, AR033:2, AR039:2, AR234:2, AR256:2, AR258:2, AR168:2, AR224:1, AR260:1,
				AR238:1, AR264:1, AR255:1, AR257:1, AR216:1, AR165:1, AR190:1, AR247:1, AK223:1, AR309:1,
				AR262:1 S0250:1
417	нонснѕѕ	827481	427	AR169:3, AR225:3, AR223:3, AR178:3, AR170:3, AR253:3, AR172:2, AR168:2, AR161:4, AR224:2,
•				AR310.2, AR284:2, AR246:2, AR282:2, AR171:2, AR311:1, AR217:1, AR200:1, AR100:1, AR213:1,
				AR277:1, AR186:1, AR265:1, AR240:1, AR295:1, AR266:1 S0276:12, S0196:3, H0024:4, S0250:-4, S0322:-3,
				S0040:2, S0028:2, S0298:1, T0082:1, H0545:1, S0206:1, S0011:1 and S0194:1.
	нонсн55	815682	798	CINDIA CHARLES OF STATE OF STA
418	HOSD125	854234	428	AR207:16, AR263:14, AR235:13, AR224:13, AR225:13, AR309:12, AR196:12, AR311:12, AR211:12,
01+	2200011	1		AR223:12. AR172:12. AR246:11, AR168:11, AR217:11, AR264:11, AR171:11, AR215:11, AR170:11,
				AR291:10, AR221:10, AR222:10, AR295:10, AR288:10, AR195:10, AR039:10, AR277:10, AK192:10,
				AR197:10. AR161:10, AR169:10, AR162:10, AR261:9, AR163:9, AR165:9, AR165:9, AR201:9,
				AR234-9 AR177-9 AR198-9, AR164-9, AR089-9, AR191-9, AR245-9, AR201-9, AR242-9, AR212-9,
				AR166:8, AR188:8, AR285:8, AR240:8, AR174:8, AR252:8, AR290:8, AR271:8, AR250:8, AR260:8,
				AR176.8, AR219.8, AR282:8, AR200:8, AR312:8, AR316:8, AR253:8, AR181:8, AR297:1, AR060:1,
				AR308:7, AR096:7, AR199:7, AR289:7, AR287:7, AR293:7, AR213:7, AR213:7, AR313:7,
				AR180:7, AR300:7, AR269:7, AR257:7, AR193:7, AR231:6, AR275:6, AR296:6, AR258:6, AR253:6,
				AR175:6, AR218:6, AR190:6, AR053:6, AR266:6, AR178:6, AR270:6, AR268:6, AR233:0, AR243:0,
	***			AR182:6. AR189:6, AR294:6, AR104:6, AR185:6, AR239:6, AR173:5, AR179:5, AR204:5, AR2772:5,
				AR256:5, AR299:5, AR274:5, AR247:5, AR033:5, AR183:5, AR211:5, AR229:5, AR267:5, AK234:5,
				AR237:5, AR255:5, AR238:4, AR228:4, AR230:4, AR203:4, AR061:4, AR28:4, AR252:4, AR252:4,
				AR227:3, AR254:3 L0754:4, L0749:4, L0659:3, L0755:3, S0356:2, L0803:2, L0750:2, L0779:2, L0359:2,
				S0029:1, H0661:1, S0354:1, H0642:1, T0040:1, L0021:1, H0599:1, H0510:1, S0003:1, H09/4:1, H0510:1,
				H0623:1, S0422:1, L0794:1, L0522:1, L0774:1, L0526:1, L0809:1, H0520:1, H0559:1, H0659:1, H0650:1, L0752:1,
				1.0608:1 and S0242:1.
	HOSD125	566845	799	11-9000 11-1310 11-3310 11 5330 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
419	HOSEG51	545809	429	4R210:13, AR250:13, AR191:13, AR174:12, AR18511, AR197:11, AR190:11, AR190:1
				AR173:11, AR254:11, AR275:11, AR163:11, AR164:11, AR17:11, AR19:11, AR254:11, AR276:11, AR276:11, AR176:11,
				AR269:10, AR175:10, AR246:10, AR271:10, AR175:110, AR1/8:1115, AR270:3, AR190:3, AR290:3, AR2
				AR185:9, AR240:9, AR089:9, AR245:9, AR252:9, AR236:9, AR208:9, AR190:3, AR197:9, AR306:3,
				ARU55:8, ARZ/4:8, ARI81:8, ARI85:9, ARI72:9, ARI75:9, ARI75:9, ARI75:9, ARI81:8, ARI

				AR180:7, AR182:7, AR297:7, AR255:7, AR195:7, AR195:7, AR316:7, AR272:7, AR291:7, AR247:7, AR251:7, AR261:7, AR242:6, AR299:6, AR200:6, AR033:6, AR262:6, AR293:6, AR294:6, AR282:6, AR253:6, AR262:6, AR2
				AR228:6, AR198:6, AR312:6, AR238:6, AR229:6, AR035:6, AR290:6, AR104:6, AR237:6, AR243:5, AR313:5, AR286:5, AR386:5, AR286:5, AR286:5, AR286:5, AR386:5, AR286:5, AR386:5, AR3
	_			AR216:5, AR212:5, AR225:5, AR213:5, AR289:5, AR277:5, AR171:5, AR172:5, AR260:5, AR224:4,
				/AR218:4, AR168:4, AR222:4, AR219:4, AR061:4, AR256:4, AR169:4, AR232:3, AR170:3, AR205:3, AR205:3, AR205:3, AR218:4, AR218:3, AR
				AR221:2 L0777:3, L0766:2, H0370:1, S0214:1, L0646:1, L0794:1, L0803:1, L0789:1, L0756:1, L0604:1 and S0458:1.
420	HOSEQ49	588824	430	AR252:80, AR253:55, AR312:37, AR250:33, AR308:29, AR309:25, AR311:24, AR264:24, AR219:23,
				AR053:23, AR213:19, AR212:17, AR201:14, AR269:14, AR191:13, AR254:13, AR313:13, AR268:13,
				AR270:12, AR290:12, AR174:12, AR096:12, AR267:11, AR263:11, AR218:11, AR176:11, AR203:10,
				AR175:10, AR173:10, AR188:9, AR182:9, AR162:9, AR161:9, AR178:9, AR163:9, AR196:9, AR316:8,
				JAR242:8, AR183:8, AR181:8, AR200:8, AR255:8, AR177:8, AR179:7, AR180:7, AR231:7, AR189:7,
				ARA55: (, ARI65: (, ARI66: , ARI66:), ARI66: (, ARI66:), ARZ40: (, AR300: 6, AR236:
				AR228:6, AR285:6, AR234:6, AR229:6, AR172:6, AR27:1:6, AR27:1:5, AR294:5, AR233:5, AR299:5,
				AR210:5, AR246:5, AR275:5, AR239:5, AR287:5, AR297:5, AR261:5, AR193:5, AR199:4, AR293:4,
				AR235:4, AR272:4, AR230:4, AR197:4, AR211:4, AR282:4, AR295:4, AR243:4, AR296:4, AR185:4,
				AR055.4, AR286.4, AR247.4, AR291.4, AR224.4, AR221.4, AR195.4, AR260.3, AR225.3, AR277.3,
				AR227:3, AR226:3, AR061:3, AR222:3, AR258:3, AR232:3, AR214:2, AR274:2, AR168:2, AR217:2,
				AR256:2, AR216:2, AR289:2, AR171:2, AR033:2, AR192:2, AR283:1, AR104:1, AR170:1 L0754:5,
				H0445:5, L0766:4, H0423:4, L0756:3, H0556:2, H0638:2, L3816:2, H0581:2, H0090:2, H0591:2, S0422:2,
				L0806:2, L3827:2, H0518:2, H0436:2, L0777:2, L0599:2, H0542:2, H0422:2, H0740:1, H0650:1, H0656:1,
				H0402:1, S0358:1, S0376:1, L3649:1, H0580:1, S0046:1, S0476:1, H0069:1, H0004:1, H0318:1, H0457:1,
				L0163:1, H0179:1, S0003:1, S0214:1, H0634:1, H0551:1, L0761:1, L0667:1, L0772:1, L5564:1, L0381:1,
				L0804:1, L0775:1, L0606:1, L0659:1, L0647:1, L5623:1, L0666:1, L0663:1, H0520:1, S0126:1, S0328:1,
				L3832:1, H0576:1, L0751:1, L0755:1, L0758:1, L0591:1, L0608:1, L3586:1 and L3839:1.
421	HOSFD58	614040	431	AR238:482, AR237:434, AR232:414, AR226:409, AR227:404, AR061:378, AR273:187, AR244:186,
				AR231:169, AR052:154, AR241:151, AR259:146, AR186:140, AR194:138, AR233:132, AR206:130,
				AR219:116, AR184:112, AR292:111, AR202:110, AR229:107, AR234:106, AR192:104, AR205:98,
				AR280:94, AR309:89, AR293:88, AR243:87, AR033:87, AR204:87, AR218:85, AR175:85, AR271:80,
				AR299:78, AK090:77, AK103:77, AK213:73, AK300:73, AK284:73, AK177:74, AK231:74, AK236:73,

			AR267:73, AR055:72, AR281:71, AR315:71, AR198:70, AR274:69, AR314:69, AR313:69, AR312:68,
			AR039:67, AR310:66, AR183:66, AR290:60, AR240:63, AR262:02, AR253:01, AR250:01, AR270:37, AR170:37, AR170:54, AR316:52, AR295:51, AR060:50, AR265:49, AR266:48,
			AR269:48, AR286:48, AR283:48, AR104:47, AR289:47, AR275:46, AR270:45, AR240:45, AR089:44,
			AR248:43, AR182:42, AR277:19, AR290:40, AR236:39, AR206:39, AR252:17, AR162:16, AR163:15, AR256:20, AR245:19, AR262:19, AR165:19, AR166:18, AR164:18, AR252:17, AR162:16, AR163:15,
			AR197:15, AR254:15, AR308:14, AR161:14, AR264:14, AR225:14, AR195:12, AR212:12, AR172:12,
			AR242:11, AR178:10, AR180:9, AR199:9, AR216:9, AR217:8, AR171:8, AR224:8, AR176:8, AR311:8,
			AR215:8, AR169:8, AR214:8, AR1/0:8, AR1/3:8, AR193:8, AR297:1, AR221:1, AR17:1, AR222:1, AR222:1, AR221:1, AR2210:3, AR288:5,
			AK223:, AK201:1, AK207:1, AK108:3, AK21:3, AK191:3, AK190:4, AK203:4, AK239:4, AK236:4, AK236:4,
			AR228.4, AR262:3, AR255:3, AR230:3, AR200:3, AR260:2 L0666:8, H0013:7, H0046:7, S0126:7, S0214:6,
			L0756;6, L0439;5, L0749;5, L0362;5, H0670;4, H0521;4, L0777;4, L0731;4, H0624;3, H0170;3, H0171;3,
-			H0250.3, H0024.3, S0003.3, H0038.3, S0422.3, L0775.3, L0805.3, H0144.3, H0547.3, S0028.3, L0742.3,
-			L0748.3, H0341.2, S0001.2, S0045.2, H0427.2, H0052.2, H0169.2, S0036.2, H0616.2, S0150.2, L0761.2,
			L0646;2, L0655;2, L0659;2, L0529;2, H0520;2, H0522;2, S0206;2, L0747;2, S0031;2, H0423;2, S0412;2,
			H0556:1, S0212:1, S0282:1, H0662:1, H0638:1, S0348:1, S0442:1, S0444:1, H0208:1, S0300:1, L3388:1,
			\$0278:1, H0261:1, H0550:1, H0333:1, H0574:1, T0114:1, H0575:1, S0474:1, H0581:1, T0115:1, H0050:1,
-			L0471:1, H0014:1, H0373:1, H0051:1, S0051:1, T0010:1, S6028:1, H0266:1, H0687:1, H0428:1, H0039:1,
			H0553:1, H0644:1, H0628:1, H0674:1, H0124:1, H0090:1, H0551:1, T0067:1, H0268:1, L0351:1, 10041:1,
			T0042:1, S0440:1, H0641:1, H0646:1, S0142:1, S0344:1, S0002:1, H0529:1, L0763:1, L0763:1, L0043:1,
			L0771:1, L0521:1, L0794:1, L0766:1, L0803:1, L0774:1, L0651:1, L0517:1, L0519:1, L5622:1, L0664:1,
			L0665:1, L0352:1, L3827:1, H0519:1, S0122:1, H0689:1, H0648:1, H0672:1, H0539:1, S0380:1, S0136:1,
			H0478:1, L0744:1, L0779:1, L0780:1, L0758:1, L0759:1, S0436:1, L0599:1, S0026:1, H0665:1, H0136:1 and
			H0542:1.
HOSFD58	383513	80	TITOTO TO THE PERSON OF THE PE
422 HOUCQ17	429229	432	AR183:38, AR269:28, AR173:21, AR270:19, AR268:19, AR290:11, AR190:11, AR172:10, AR162:10, AR267:14 AR172:12, AR274:11, AR179:11, AR181:10, AR165:10, AR296:9, AR164:9, AR166:9, AR189:9,
			AR271:8. AR197:8. AR161:8, AR285:8, AR184:8, AR284:8, AR162:8, AR298:8, AR292:8, AR163:7,
			AR174.7, AR291.7, AR178.7, AR192:7, AR198:6, AR241:6, AR240:6, AR171:6, AR177:6, AR255:6,
			AR293:6, AR207:6, AR245:6, AR089:6, AR176:6, AR188:5, AR180:5, AR246:5, AR170:5, AR235:5,
			AR195:5, AR288:5, AR191:5, AR201:5, AR237:5, AR210:5, AR185:5, AR266:5, AR289:5, AR193:4,
			AR168:4, AR262:4, AR294:4, AR287:4, AR211:4, AR311:4, AR295:4, AR257:4, AR264:4, AR060:4,
			AR243:4, AR212:4, AR291:4, AR039:4, AR109:4, AR200:4, AR100:4, AR200:4, AR200:4,

				AR261:4, AR033:3, AR312:3, AR282:3, AR204:3, AR252:3, AR186:3, AR273:3, AR308:3, AR231:3, AR226:3, AR316:3, AR256:3, AR229:3, AR215:3, AR217:3, AR234:3, AR300:3, AR053:3, AR230:3, AR230:3, AR230:3, AR230:3, AR230:3, AR230:3, AR230:3, AR230:3, AR230:3, AR275:3
				AR13333, AR1396.3, AR2366.3, AR2255.3, AR3095.2, AR2585.2, AR2665.2, AR2665.2, AR2665.3, AR2665.
				AR203:2, AR216:2, AR222:2, AR232:2, AR214:2, AR224:2, AR283:2, AR223:2, AR250:1,
				AR253:1, AR218:1, AR310:1 L0731:19, S0414:18, L0665:18, L0747:10, L0749:9, H0411:7, H0431:7,
				L0662:7, L0750:6, H0031:5, L0748:5, L0439:5, S0194:4, H0717:3, H0014:3, L0666:3, L0665:3, S0120:5, H0690:3-1-0740:3-1-0752:3-1-0599:3-1-0361:3-H0713:2-S0212:2-H0427:2-S0280:2-H0544:2-S0003:2.
	•			H0644:2, L0598:2, L0649:2, L0803:2, L0657:2, L0659:2, L0809:2, L3872:2, L0789:2, L0438:2, S0406:2,
				H0478:2, L0744:2, L0754:2, L0756:2, L0779:2, L0757:2, L0758:2, H0667:2, S0276:2, H0739:1, H0624:1,
				H0170:1, H0171:1, S0040:1, H0295:1, L3403:1, S0354:1, S0358:1, S0444:1, S0360:1, S0408:1, L1441:1,
				H0730:1, H0734:1, S6022:1, H0587:1, H0486:1, T0039:1, L3506:1, L3530:1, H0599:1, H0036:1, S0010:1,
				H0545:1, L0471:1, L0163:1, H0687:1, S0250:1, L0483:1, H0030:1, H0553:1, L0142:1, H0617:1, H0610:1,
				1000 (1) 1003 (1) 1010 (1) 1049 (4) 10 10 10 10 10 10 10 10 10 10 10 10 10
				L0774:1, L0773:1, L0373:1, L0784:1, L0776:1, L0636:1, L4669:1, L0783:1, L0384:1, L3622:1, L4239:1,
				HU693:1, HU724:1, HU52U:1, HU67U:1, HU648:1, HU67.2:1, SU044:1, LU777:1, LU733:1, LU733:1, SU031:1,
423	HOUDK26	\$65393	433	AR313:6. AR172:6. AR248:6. AR171:6. AR222:5. AR214:5. AR060:5. AR216:5. AR161:5. AR163:5.
				AR162:5, AR055:5, AR186:4, AR221:4, AR176:4, AR224:4, AR089:4, AR309:4, AR165:4, AR181:4,
				AR164:4, AR166:4, AR183:4, AR235:4, AR269:4, AR215:4, AR299:4, AR052:4, AR217:3, AR180:3,
				AR264:3, AR178:3, AR177:3, AR191:3, AR251:3, AR236:3, AR218:3, AR228:3, AR240:3, AR096:3,
				AR247:3, AR282:3, AR223:3, AR104:3, AR212:3, AR310:3, AR201:3, AR316:3, AR267:3, AR168:3,
				AR261:3, AR312:3, AR293:3, AR196:3, AR193:3, AR255:3, AR170:3, AR295:3, AR300:3, AR277:3,
				AR266:3, AR268:3, AR219:3, AR174:3, AR185:3, AR197:3, AR270:3, AR213:3, AR190:3, AR061:2,
				AR292:2, AR173:2, AR179:2, AR175:2, AR053:2, AR238:2, AR184:2, AR311:2, AR182:2, AR239:2,
				AR291:2, AR225:2, AR257:2, AR297:2, AR308:2, AR283:2, AR188:2, AR039:2, AR253:2, AR275:2,
				AR289:2, AR233:2, AR288:2, AR294:2, AR287:2, AR242:2, AR229:2, AR033:2, AR262:2, AR169:2,
				AR259:2, AR189:2, AR260:2, AR258:2, AR230:2, AR272:2, AR203:2, AR200:2, AR195:2, AR234:2,
				AR237:1, AR281:1, AR199:1, AR205:1, AR2131:1, AR274:1, AR290:1, AR252:1, AR296:1, AR226:1,
				AR286:1, AR271:1, AR256:1, AR285:1, AR194:1, AR227:1, AR210:1 S0040:1, H0696:1, L0742:1, S0031:1
				and S0434:1.
424	HOUGG12	1352306	434	AR210:10, AR176:10, AR231:9, AR183:8, AR226:8, AR269:8, AR053:8, AR268:7, AR162:7, AR290:7,
				ARI/8:1, ARI81:1, AR223:1, AR211:1, AR190:1, AR191:1, AR101:1, AR101:1, AR101:1, AR103:1,

				AR239:6, AR182:6, AR270:6, AR207:6, AR189:6, AR266:6, AR228:6, AR229:6, AR197:6, AR203:6, AR239:6, AR203:6, AR2
				AR200:5, AR175:5, AR234:5, AR201:5, AR165:5, AR174:5, AR212:5, AR190:5, AR245:5, AR236:5, AR246:5, AR173:5, AR288:5, AR282:5, AR165:5, AR275:5, AR205:5, AR200:5, AR2
				AR264:4, AR232:4, AR293:4, AR289:4, AR164:4, AR195:4, AR235:4, AR251:4, AR195:4, AR249:4, AR269:4, AR269:4, AR263:4, AR267:4, AR179:4, AR300:4, AR285:4, AR283:4, AR264:4,
				AR262:4, AR033:4, AR299:4, AR214:4, AR224:4, AR039:3, AR222:3, AR242:3, AR296:3, AR213:3,
				AR297:3, AR254:3, AR227:3, AR312:3, AR109:3, AR215:3, AR511:3, AR159:3, AR306:3, AR316:2, AR230:3, AR230:3, AR168:3, AR060:2, AR286:2, AR256:2, AR170:2, AR216:2,
				AR258:2, AR277:2, AR274:2, AR260:2, AR172:2, AR104:2, AR219:1, AR313:1, AR055:1, AR217:1,
				NK263:1, ARU90:1, ARZ10:1, S0210:1, S0210:1, S002:1, L0523:1, L0793:1, S0126:1, H0521:1, L0757:1, H0444:1, H0445:1, S0436:1, S0436:1, H0653:1, and H0422:1.
	HOUGG12	1352305	801	
	HOUGG12	775824	802	COLIGA
425	HOVCA92	527644	435	AR274:3, AR246:3, AR309:3, AR243:3, AR217:3, AR039:2, AR172:2, AR223:2, AR161:2, AR178:2,
				AR270:2, AR299:1, AR180:1, AR180:1, AR182:1, AR262:1, H0402:1, H0408:1, H0264:1 and S0052:1.
426	HPASA81	1352382	436	AR277:48, AR265:14, AR251:13, AR310:12, AR052:9, AR235:9, AR223:8, AR202:8, AR176:8, AR224:8,
}				AR169:7, AR214:7, AR206:7, AR312:7, AR172:7, AR309:7, AR273:7, AR261:7, AR170:7, AR222:1,
				AR171:7, AR215:7, AR263:6, AR225:6, AR236:6, AR241:6, AR181:6, AR186:6, AR168:0, AR313:0,
				AR194:6, AR244:6, AR239:6, AR282:6, AR178:6, AR178:6, AR313:5, AR313:5, AR200:5,
				AR248:5, AR249:5, AR247:5, AR288:5, AR216:5, AR196:5, AR248:5, AR241:5, AR229:5, AR288:5, AR2
				ARZ83:5, ARZ05:5, ARZ46:5, AR055:5, AR055:5, AR183:5, AR174:5, AR270:4, AR243:4, AR096:4,
				AR229:4, AR253:4, AR180:4, AR268:4, AR240:4, AR267:4, AR300:4, AR200:4, AR219:4, AR175:4,
				AR289.4, AR293.4, AR204.4, AR269.4, AR182.4, AR297.4, AR238.4, AR257.4, AR286.4, AR191.4,
				AR233:4, AR285:4, AR275:4, AR198:4, AR284:4, AR232:4, AR197:4, AR039:4, AK189:4, AR0000:4,
				AR271:4, AR162:4, AR203:4, AR291:4, AR188:4, AR230:4, AR184:4, AR255:4, AR237:4, AR287:4,
				AR195:4, AR274:3, AR218:3, AR220:3, AR165:3, AR231:3, AR202:3, AR274:3, AR298:3, AR163:3,
				ARZ90:3, ARZ90:3, ART179:3, ART105:3, ARZ56:3, ARZ52:2, ARZ52:2, ARZ10:2, ARZ58:2, AR311:2,
				AR250:2, AR211:2, AR201:2, AR164:2, AR193:2, AR212:2, AR259:2, AR272:2, AR260:1, AR254:1
		-		S0380:18, S0378:7, H0270:3, T0023:2, L0602:2, H0622:1, L0483:1, H0623:1, LU/66:1, H0/5/:1 and S0430:1.

Γ	HPASA81	900548	803	
	HPASA81	801923	804	
427	HPBCU51	411080	437	AR253:8, AR252:3, AR217:3, AR207:3, AR171:3, AR168:3, AR170:3, AR198:2, AR223:2, AR191:2, AR274:2, AR299:1, AR181:1, AR222:1, AR214:1, AR178:1, AR309:1, AR277:1, AR210:1, AR224:1 T0006:1
428	HPDDC77	1306899		AR060:25, AR104:24, AR089:24, AR055:22, AR185:18, AR039:15, AR096:12, AR316:11, AR218:9, AR283:9, AR300:9, AR219:8, AR299:8, AR240:7, AR282:7, AR201:5, AR261:5, AR313:6, AR183:6, AR235:6, AR198:6, AR197:6, AR204:6, AR277:5, AR201:5, AR269:5, AR228:3, AR233:5, AR236:5, AR198:6, AR197:6, AR204:6, AR277:5, AR201:5, AR209:4, AR277:4, AR181:4, AR236:5, AR176:4, AR309:4, AR277:4, AR180:4, AR275:4, AR1824:4, AR287:4, AR1828:3, AR267:4, AR178:4, AR277:4, AR183:4, AR277:4, AR183:4, AR277:4, AR180:4, AR277:3, AR206:3, AR
	HPDDC77	422936		
429	HPDWP28	1094609		L0761:1, L0789:1, L0790:1 and H0658:1.
	HPDWP28	1047702	806	
430	HPFCL43	535710	440	AR274:4, AR221:3, AR163:2, AR266:2, AR171:2, AR177:2, AR289:2, AR205:2, AR264:2, AR161:1, AR225:1, AR297:1, AR297:1, AR162:1, AR162:1, AR053:1, AR297:1, AR297:1, AR297:1, AR313:1, AR172:1, AR270:1, AR217:1, L0766:3, L0731:3, S0358:2, H0529:2, L0794:2, L0777:2, L0759:2, H0624:1, H0657:1, S0408:1, H0441:1, H0562:1, H0083:1, H0169:1, H0441:1, L0763:1, L0768:1, L0500:1, L072:1, L0768:1, L0750:1, L0758:1, L075

431	HPFDG48	542227	441	AR195:7, AR235:6, AR197:6, AR263:4, AR272:4, AR274:4, AR308:4, AR243:4, AR309:4, AR266:3,
		:		AR246:3, AR253:3, AR311:3, AR264:3, AR212:3, AR215:3, AR291:3, AR165:3, AR275:3, AR104:3,
		·		ARI61:3, ARI62:3, ARI60:3, ARI69:3, ARI69:3, ARI60:2, ARI60:2, ARI20:2, ARI74:2, AR225:2,
				AR295:2, AR24/:2, AR260:2, AR312:2, AR290:2, AR195:2; AR188:2, AR285:2, AR181:1,
				AR089-1 AR205-1, AR178-1, AR237-1, AR277-1, AR210-1, AR175-1, AR211-1, AR269-1, AR096-1,
				AR289:1, AR277:1, AR173:1, AR200:1, AR238:1, AR255:1, AR039:1, AR270:1, AR262:1 L0748:6,
				L0182:1, H0169:1, L0809:1, S0428:1, S0374:1, H0659:1, S0136:1, L0754:1 and L0749:1.
432	HPIA068	833082	442	AR164:13, AR165:13, AR205:13, AR166:13, AR089:13, AR161:12, AR162:12, AR271:12, AR163:12,
1	22.			AR242:8, AR197:7, AR250:7, AR198:7, AR053:6, AR313:6, AR207:6, AR060:6, AR299:6, AK039:6,
				AR245:5, AR204:5, AR170:5, AR308:5, AR309:5, AR195:5, AR300:5, AR243:5, AR312:5, AR246:5,
				AR192.5, AR213.5, AR196.4, AR212.4, AR254.4, AR240.4, AR272.4, AR201.4, AR214.4, AR215.4,
				AR266:4. AR264:4, AR268:4, AR316:4, AR253:4, AR176:4, AR263:4, AR178:4, AR270:4, AR223:4,
				AR193-4 AR096:4, AR282:4, AR225:3, AR169:3, AR188:3, AR261:3, AR311:3, AR183:3, AR182:3,
				AR181-3, AR236:3, AR033:3, AR267:3, AR291:3, AR177:3, AR247:3, AR229:3, AR203:3, AR238:3,
				AR180-3 AR199:3, AR286:3, AR226:3, AR175:3, AR297:3, AR269:3, AR289:2, AR217:2, AR257:2,
				AR189-7 AR228:2, AR230:2, AR200:2, AR287:2, AR290:2, AR233:2, AR055:2, AR239:2, AR216:2,
				AR223-7-3 AR231-7-3 AR171:2, AR190:2, AR274:2, AR262:2, AR296:2, AR288:2, AR231:2, AR224:2,
				AR204.7 AR177.2 AR185:2 AR061:2, AR293:2, AR168:2, AR234:2, AR295:2, AR174:2, AR275:2,
				AR283.2. AR285.2. AR232.2. AR211:1, AR191:1, AR252.1, AR104:1, AR179:1, AR227:1, AR277:1,
				AR219:1 AR255:1 S0150:2. L0766:2. L0758:2. H0556:1, L0748:1 and L0749:1.
123	SIOdidi.	1210868	443	AP240-10 AR211:10 AR178:9 AR270:8 AR221:8, AR295:7, AR235:7, AR161:7, AR162:7, AR189:7,
433	HFIBO13	0000161	1	AR163.7 AR288.7, AR255.6, AR191.6, AR175.6, AR293.6, AR096.6, AR183.6, AR182.6, AR188.6,
				AR269-5 AR236:5, AR190:5, AR173:5, AR180:5, AR165:5, AR174:5, AR290:5, AR164:5, AR274:5,
				AR166:5. AR060:5. AR261:5. AR179:5. AR203:5, AR195:5, AR222:5. AR055:4, AR193:4, AR181:4,
				AR297:4, AR291:4, AR171:4, AR197:4, AR168:4, AR289:4, AR266:4, AR268:4, AR296:4, AR262:4,
				AR287:4 AR104:4, AR196:4, AR267:4, AR247:4, AR177:4, AR299:4, AR176:4, AR033:4, AR246:4,
				AR177:4 AR275; 3, AR263; 3, AR286; 3, AR2175; AR217; 4, AR110; 3, AR394; 3, AR285; 3,
				AR308:3. AR228:3, AR300:3, AR282:3, AR089:3, AR257:3, AR277:3, AR214:3, AR238:3, AR224:3,
				AR245:3, AR233:3, AR210:3, AR272:3, AR201:3, AR254:3, AR309:3, AR311:3, AR243:3, AR264:3,
				AR212:3, AR215:3, AR185:3, AR312:3, AR260:3, AR213:3, AR313:3, AR053:2, AR256:2, AR200:2,
				AR237:2, AR231:2, AR283:2, AR229:2, AR061:2, AR239:2, AR216:2, AR227:2, AR232:2, AR226:2,
				AR258:2, AR234:2, AR230:2, AR271:2, AR199:2, AR039:1, AR223:1 L0747:8, L0749:5, L0755:5, H0013:3,
				L0769:3, L0731:3, S0212:2, L0770:2, L0803:2, H0144:2, L0756:2, H0624:1, H0171:1, S0262:1, H0770:1,

				H0592:1, H0427:1, H0575:1, H0041:1, H0124:1, H0163:1, H0038:1, L0637:1, L0774:1, L0775:1, L0791:1, H0648:1, H0756:1, S0028:1, L0439:1, L0777:1 and S0436:1.
	HPIBO15	590741	807	
434	нРЈВК12	1011467	444	AR215:5, AR197:4, AR039:4, AR309:4, AR245:4, AR161:3, AR162:3, AR163:3, AR204:3, AR165:3, AR225:3, AR169:3, AR264:3, AR282:3, AR272:3, AR089:3, AR180:3, AR213:3, AR172:3, AR253:2,
				AR166:2, AR212:2, AR193:2, AR252:2, AR271:2, AR312:2, AR275:2, AR164:2, AR060:2, AR240:2, AR216:2, AR266:2, AR260:2, AR277:1
				AR311:1, AR247:1, AR313:1, AR242:1, AR199:1, AR299:1, AR316:1, AR188:1, AR104:1, AR168:1, AR185:1, AR291:1, AR291:1, AR294:1, AR294:1, AR290:1, AR096:1
	HPJBK12	525375	808	
	HPJBK12	796925	608	
	HPJBK12	699587	810	
435	HPJCL22	1146674	445	AR313:19, AR039:18, AR299:10, AR300:10, AR089:9, AR096:9, AR277:8, AR185:8, AR240:7, AR316:7,
				AK104:0, AK218:0, AK060:3, AK020:3, AK282:4, AK219:4, AK283:2 F10019:2, F10464:1, F10600:1, H0553:1, H0056:1, L0766:1, L0665:1, H0693:1, H0593:1, S0152:1, H0521:1, L0754:1, H0543:1 and H0423:1.
	HPJCL22	1034817	811	
	HPJCL22	1046434	812	
436	HPJCW04	696685	446	AR313:17, AR165:14, AR164:13, AR166:13, AR162:13, AR161:13, AR163:12, AR196:12, AR089:11,
				AR229:10, AR235:10, AR181:10, AR252:10, AR236:10, AR178:9, AR300:9, AR299:9, AR247:9, AR173:9,
				AR213:9, AR293:9, AR053:9, AR309:9, AR176:9, AR174:8, AR096:8, AR312:8, AR193:8, AR242:8,
				AR233:8, AR177:8, AR175:8, AR201:8, AR183:8, AR192:8, AR264:8, AR240:8, AR191:8, AR262:8,
				AR270:8, AR179:7, AR180:7, AR226:7, AR182:7, AR269:7, AR257:7, AR215:7, AR238:7, AR285:7,
				AR189:7, AR170:7, AR295:7, AR234:7, AR261:7, AR308:7, AR188:7, AR316:7, AR268:7, AR296:7,
				AR258:7, AR199:6, AR239:6, AR169:6, AR203:6, AR060:6, AR185:6, AR212:6, AR263:6, AR237:6,
		_		AR197:6, AR207:6, AR275:6, AR286:6, AR288:6, AR231:6, AR271:6, AR255:6, AR198:6, AR228:5,
				AR294:5, AR195:5, AR297:5, AR287:5, AR282:5, AR039:5, AR223:5, AR230:5, AR267:5, AR291:5,
				AR168:5, AR311:5, AR200:5, AR277:5, AR205:5, AR290:5, AR253:4, AR204:4, AR190:4, AR033:4,
				AR227:4, AR055:4, AR266:4, AR272:4, AR254:4, AR289:4, AR250:4, AR104:4, AR232:4, AR274:4,
				AR245:4, AR225:3, AR214:3, AR216:3, AR224:3, AR283:3, AR061:3, AR217:3, AR172:3, AR219:3,
				AR211:3, AR260:3, AR222:2, AR171:2, AR218:2, AR256:2, AR246:2, AR243:2, AR210:1 S0152:1
437	HPJEX20	1352420	447	AR221:5, AR271:4, AR171:3, AR309:3, AR176:3, AR183:2, AR175:2, AR308:2, AR245:2, AR225:2,
				AR197.2, AR235:2, AR200:2, AR269:2, AR282:2, AR172:2, AR195:2, AR291:1, AR290:1, AR312:1,
				AR165:1, AR272:1, AR261:1, AR264:1, AR211:1, AR210:1, AR168:1, AR169:1, AR193:1, AR224:1,

				AR205:1 S0428:1 and S0152:1.
	HPJEX20	1184442	813	
	HPJEX20	975252	814	
	HPJEX20	894744	815	
	HPJEX20	898220	918	
438	HPMAI22	635491	448	AR277:10, AR282:8, AR170:7, AR283:7, AR245:7, AR055:7, AR192:7, AR271:7, AK274:6, AK240:6, AK240:6, AR246:6, AR246:6, AR246:6, AR246:6, AR246:6, AR246:5, AR
				ARZ336, AR1760, ARZ976, AR2076, AR266, AR266, AR266, AR268, AR268, AR268, AR266, AR266, AR268, AR268, AR268, AR266, AR266, AR266, AR268, AR268, AR268, AR266, AR266, AR266, AR268, AR268, AR266, AR266, AR266, AR266, AR268, AR268, AR268, AR268, AR266, AR266, AR266, AR266, AR268,
				ARIO4:3, AR309:3, AR163:3, AR221:3, AR163:4, AR195:4, AR175:4, AR215:4, AR201:4, AR174:4,
				AR218:4, AR171:4, AR263:4, AR223:4, AR193:4, AR295:4, AR243:4, AR168:4, AR172:4, AR264:4,
				AR270:4, AR185:4, AR269:4, AR199:4, AR288:3, AR242:3, AR229:3, AR096:3, AR261:3, AR299:3,
	_			AR222:3, AR290:3, AR205:3, AR179:3, AR182:3, AR217:3, AR164:3, AR291:3, AR169:3, AR165:3,
				[AR267:3, AR213:3, AR252:3, AR300:3, AR228:3, AR297:3, AR189:3, AR166:3, AR313:3, AR272:3,
				AR239:3. AR311:3. AR285:3, AR188:3, AR173:3, AR233:3, AR312:3, AR236:3, AR293:3, AR296:3,
				AR190:3, AR191:3, AR200:3, AR219:3, AR257:3, AR287:3, AR286:3, AR212:3, AR226:3, AR289:3,
				AR214:3. AR196:3. AR294:2. AR250:2. AR033:2, AR203:2, AR231:2, AR235:2, AR262:2, AR252:2,
				AR225;2, AR274;2, AR061;2, AR210;2, AR287;2, AR216;2, AR275;2, AR234;2, AR230;2, AR227;2,
				AR308.2. AR053;2. AR248:2, AR247:2, AR256:1, AR238:1, AR211:1, AR260:1 L0794:6, H0031:4,
				L0779;3, L0600;3, L0768;2, L0805;2, L0755;2, L3643;1, H0713:1, H0662:1, L0767:1, L0657:1, L0809:1,
				L0790:1, S0052:1, H0724:1, H0539:1, S0406:1, L0756:1, S0436:1 and L0603:1.
439	HPMFP40	638165	449	AR282:6, AR180:3, AR197:3, AR242:3, AR161:3, AR245:3, AR163:3, AR162:2, AR263:2, AR230:2,
}				AR240:2, AR224:2, AR176:2, AR235:2, AR177:2, AR283:1, AR223:1, AR299:1, AR178:1, AR272:1,
				AR277:1, AR171:1, AR089:1 H0031:6
044	HPMGJ45	798102	450	AR233:39, AR257:31, AR294:31, AR227:30, AR234:28, AR255:27, AR286:26, AR297:26, ARZ58:26,
				AR231:26, AR262:24, AR287:24, AR203:23, AR293:23, AR260:23, AR182:22, AK226:22, AK265:21,
	-			AR239:20, AR226:20, AR193:19, AR269:19, AR161:19, AR162:19, AR288:19, AR206:18,
				AR163:18, AR164:18, AR166:17, AR200:17, AR229:17, AR295:16, AR199:16, AR295:10,
				AR270:16, AR176:16, AR175:15, AR190:15, AR300:15, AR275:15, AR232:15, AR268:14, AR201:14,
				AR179:14, AR238:14, AR173:13, AR061:13, AR247:13, AR230:12, AR291:12, AR242:12, AR033:12,
				AR191:11, AR290:11, AR189:11, AR183:11, AR236:11, AR178:11, AR266:11, AR055:10, AR174:10,
				AR195:10, AR196:10, AR201:10, AR240:10, AR274:9, AR308:9, AR180:9, AR289:9, AR213:9, AR192:9,
				AR185:9, AR212:8, AR282:8, AR312:8, AR243:8, AR235:8, AR205:8, AR283:8, AR254:7, AR053:7,
				AR197:7, AR316:7, AR256:7, AR177:7, AR060:7, AR250:7, AR296:7, AR252:7, AR181:7, AR188:6,
				AR272:6, AR311:6, AR264:6, AR198:6, AR089:6, AR299:5, AR309:5, AR246:5, AR245:5, AR253:5,

				AR218:4, AR215:4, AR214:4, AR313:4, AR216:4, AR271:4, AR168:4, AR207:4, AR039:3, AR221:3,
				AR169:3, AR277:3, AR219:3, AR096:3, AR170:3, AR263:3, AR222:2, AR225:2, AR172:2, AR171:2, AR104:2, AR223:2, H0024:171, H0123:156, S0027:114, S0126:81, H0144:79, S3014:79, S0022:68,
				S0040:63, H0050:62, S0037:60, H0013:58, H0619:54, S0011:54, H0251:49, S0028:48, S0250:47, H0252:37,
				H0081:36, H0135:35, L0589:30, H0100:29, H0486:28, H0620:25, L0565:23, H0124:20, H0333:19, S0212:18, H0041:18, H0242:10, H0342:10, S0210:10, H0645:15, H0424:10, S0242:10, S0210:10, H0645:15, H04645:10, S0242:10, S0242
		·		\$0192:10, \$0194:10, \$0418:9, L0754:9, \$3012:8, H0586:7, H0309:7, T0023:7, H0551:7, L0748:7, L0603:7,
				S0420:6, S0360:6, H0208:6, S0390:6, L0750:6, H0352:6, H0381:5, T0040:5, H0427:5, H0544:5, H0292:5,
				H0039:5, H0622:5, H0598:5, L0751:5, H0265:4, H0370:4, H0505:4, H0086:4, H0051:4, H0594:4, H0031:4,
				H0087:4, S0124:4, L0740:4, L0605:4, S0116:3, H0255:3, H0587:3, H0644:3, H0617:3, S0208:3, S0026:3,
				H0171:2, H0294:2, S0376:2, H0360:2, H0069:2, H0546:2, H0172:2, L0471:2, H0057:2, S0003:2, H0628:2,
				H0163:2, H0090:2, H0646:2, H0538:2, L0375:2, H0658:2, H0660:2, S0332:2, L0755:2, L0757:2, H0343:2,
				H0595:2, H0170:1, H0295:1, S0114:1, S0001:1, H0663:1, S0354:1, H0393:1, H0431:1, H0392:1, H0485:1,
				L0022:1, T0082:1, H0421:1, H0209:1, H0023:1, H0099:1, H0266:1, H0288:1, H0615:1, L0053:1, H0606:1,
				H0169:1, H0316:1, H0038:1, H0040:1, H0616:1, T0067:1, H0488:1, H0059:1, H0102:1, L0564:1, T0041:1,
				80382:1, H0647:1, L0598:1, S0052:1, T0068:1, H0519:1, H0528:1, S0004:1, H0555:1, H0436:1, H0627:1,
				L0611:1, S0432:1, L0743:1, L0744:1, L0756:1, L0759:1, L0599:1, L0593:1, H0667:1, S0276:1, S0196:1,
				S0458:1, S0462:1 and H0293:1.
4	HPOAC69	396804	451	AR225:4, AR176:4, AR282:3, AR309:2, AR183:2, AR270:2, AR177:2, AR181:2, AR169:2, AR268:2,
	,			AR229:2, AR211:2, AR228:2, AR274:2, AR239:2, AR175:2, AR170:2, AR237:2, AR291:2, AR089:2,
				AR182:2, AR221:2, AR216:2, AR263:2, AR238:2, AR266:2, AR312:2, AR300:2, AR168:2, AR165:2,
				AR172:2, AR213:2, AR257:2, AR162:2, AR233:1, AR161:1, AR203:1, AR223:1, AR289:1, AR179:1,
				AR235:1, AR055:1, AR226:1, AR227:1, AR096:1, AR286:1, AR207:1, AR171:1, AR231:1, AR193:1,
				AR295:1, AR061:1, AR299:1, AR178:1, AR296:1, AR290:1, AR163:1, AR283:1, AR285:1, AR224:1,
				AR173:1, AR247:1, AR288:1, AR269:1, AR316:1, AR060:1, AR277:1, AR214:1, AR190:1, AR196:1,
				AR267:1, AR174:1, AR311:1, AR199:1 S0136:55 and H0595:1.
442	HPRBC80	829136	452	AR296:40, AR291:16, AR295:15, AR289:12, AR256:12, AR235:11, AR261:11, AR266:11, AR165:11,
	_			AR277:11, AR264:11, AR164:11, AR161:11, AR162:11, AR260:10, AR163:10, AR297:10, AR166:10,
				AR285:10, AR039:9, AR257:9, AR288:9, AR089:9, AR236:9, AR263:9, AR313:8, AR191:8, AR204:8,
				/AK238:8, AR287:8, AR255:8, AR286:8, AR207:8, AR253:8, AR293:8, AR309:8, AR198:8, AR242:8,
				AR271:7, AR096:7, AR312:7, AR262:7, AR196:7, AR316:7, AR205:7, AR181:7, AR192:7, AR254:7,
				AR282:7, AR104:7, AR311:6, AR308:6, AR171:6, AR250:6, AR053:6, AR182:6, AR055:6, AR225:6,
				AR294:6, AR269:6, AR283:6, AR240:6, AR258:6, AR217:6, AR199:6, AR270:6, AR190:6, AR173:6,
				AR245:5, AR272:5, AR243:5, AR176:5, AR224:5, AR175:5, AR177:5, AR183:5, AR200:5, AR060:5,

AP10055 AP180-5 AR168-5 AR197-5 AR188-5 AR223-5, AR170-5, AR174-5, AR218-5, AR221-5,	AR212:5, AR246:5, AR214:5, AR193:4, AR300:4, AR213:4, AR274:4, AR195:4, AR179:4, AR178:4, AR231:4, AR235:4, AR286:5, AR286:5, AR189:4, AR267:4, AR287:4, AR287:4, AR287:4, AR287:4, AR287:4, AR287:4, AR287:4, AR287:4, AR288:4, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:3, AR288:2, L0808:5, L0808:5, L0759:4, L0759:3, L0758:3, L0758:3, L0758:2, L0808:5, L0808:5, L0808:5, L0808:3, L0808:1, L0808:1, L0808:1, L0808:1, L0808:1, L0888:1, L08				AR104:20, AR272:17, AR185:15, AR293:14, AR237:14, AR230:13, AR290:13, AR101:12, AR297:10, AR102:12, AR283:12, AR163:12, AR294:12, AR237:11, AR238:11, AR233:10, AR297:10, AR162:12, AR252:10, AR289:12, AR297:11, AR232:9, AR166:8, AR252:10, AR289:9, AR061:9, AR231:9, AR299:9, AR166:9, AR297:10, AR232:9, AR166:8, AR275:8, AR297:3, AR232:9, AR166:8, AR275:8, AR297:7, AR297:6, AR297:7, AR297:6, AR297:7, AR297:7, AR297:6, AR297:7, AR297:1, H0789:1, H0789:1, H0780:1, П	
-		95 817	10 453	49 454	560 455	;
		7200	526310	526749	0951001	
		HPRBC80	HPRSB76	HPVAB94	HPWAY46	
			 	1	445	

446	HPWAY46	789574	819	AP286-12 AP285-12 AP161-11 AP162-11 AP163-11 AP089-9 AP291-9 AP165-9 AP164-9 AP166-8.
0	HFW AZ53	413270	ì	AR296:14, AR293:14, AR101:11, AR102:11, AR103:17, AR309:7, AR192:7, AR180:7, AR296:14, AR296:14, AR296:14, AR102:7, AR296:7, AR296:5, AR296:4, AR296:3, AR29
447	HPWDJ42	722246	457	AR313:65, AR165:39, AR164:38, AR166:36, AR162:32, AR161:32, AR163:31, AR096:29, AR089:29, AR085127, AR173:26, AR300:25, AR180:23, AR178:20, AR229:20, AR218:20, AR240:19, AR247:19, AR242:27, AR173:26, AR300:25, AR180:23, AR178:20, AR229:17, AR182:17, AR28:17, AR238:17, AR238:17, AR312:16, AR187:16, AR196:15, AR293:15, AR270:15, AR174:14, AR060:14, AR262:14, AR233:11, AR264:13, AR219:13, AR219:13, AR295:11, AR295:11, AR295:11, AR295:11, AR295:11, AR295:11, AR295:11, AR295:11, AR295:11, AR285:11, AR295:11, AR285:11, AR285:11, AR295:11, AR285:11, AR295:11, AR295:11, AR295:11, AR295:11, AR285:11, AR295:11, AR295:1
	HPWDJ42	709662	820	
448	HPZAB47	585702	458	AR313:12, AR165:9, AR164:8, AR166:8, AR162:8, AR173:8, AR161:7, AR242:7, AR089:7, AR180:6, AR247:6, AR096:6, AR300:6, AR178:6, AR175:5, AR198:5, AR257:5, AR293:5, AR262:5, AR176:5, AR183:5, AR197:5, AR181:5, AR039:5, AR299:5, AR309:5, AR182:5, AR254:5, AR204:4, AR274:4, AR258:4, AR192:4, AR269:4, AR233:4, AR179:4, AR275:4, AR238:4, AR312:4, AR312:4, AR263:4, AR291:4, AR060:4, AR053:4, AR174:4, AR310:4, AR316:4,

449	HRABB15 HRABA80 HRABA80 HRACD15	658717 882176 588460 871221	459 460 461 461	AR25674, AR212:4, AR177:4, AR234;4, AR185:4, AR271:3, AR296:3, AR196:3, AR268:3, AR269:3, AR268:3, AR269:3, AR269:3, AR269:3, AR269:2, AR299:2, AR299:2, AR299:2, AR299:2, AR299:2, AR299:2, AR299:1, S0378:1 AR055:1, AR299:1, AR239:1, AR239:1, AR218:2, AR218:2, AR218:3, AR218:3, AR218:3, AR269:3, AR190:3, AR190:3, AR190:3, AR190:3, AR190:3, AR209:3, AR20
				AR240:6, AR212:6, AR190:0, AR220:1, AR268:5, AR293:5, AR283:5, AR295:5, AR104:5, AR247:5, AR221:6, AR225:5, AR180:3, AR266:6, AR296:5, AR293:5, AR296:5, AR296:4, AR296:4, AR296:4, AR296:4, AR198:4, AR1
				AR185:4, AK280:4, AK1/4:4, AK1/4:4, AK1/4:4

				AR173:4, AR179:4, AR033:4, AR296:3, AR214:3, AR217:3, AR181:3, AR267:3, AR170:3, AR256:3, AR231:3, AR224:3, AR253:3, AR234:3, AR230:3, AR230:3, AR260:3, AR237:3, AR252:3, AR250:3, AR250:3, AR260:3, AR2
		-		AR222.2, AR172.2, AR168.2, AR055.2, AR207.1, AR218:1 H0556:15, H0265:8, L0751:8, H0617.7, T 0662.7 T 0766.5 T 0800:5 H0040.4 H0494.4 S0142.4 T 0769.4 H0555:4 H0543.4 H0341:3.
				L0534:3, H0486:3, L0649:3, L0666:3, H0658:3, L0749:3, L0758:3, H0624:2, S0040:2, L0415:2, H0261:2,
				H0549:2, H0550:2, H0618:2, H0052:2, S0150:2, L0805:2, L0807:2, L0657:2, L0790:2, H0539:2, S0380:2, R0743:2, R0743:2, R0743:3, R07
				H0589:1, H0125:1, L0539:1, S0444:1, S0360:1, H0729:1, H0619:1, S0278:1, H0392:1, H0592:1, L3817:1,
				H0485:1, H0635:1, S0280:1, H0599:1, H0042:1, H0194:1, H0546:1, H0046:1, H0571:1, H0050:1, H0620:1,
				H0024:1, H0594:1, H0266:1, H0416:1, H0188:1, H0290:1, H0213:1, H0611:1, H0644:1, H0628:1, H0606:1, H010156:1, H0106:1, H
				S0016:1, H0561:1, H0132:1, H0646:1, S0422:1, L0598:1, H0529:1, L0763:1, L0638:1, L4747:1, L0761:1,
				L0800:1, L0648:1, L0774:1, L0651:1, L0378:1, L0776:1, L0629:1, L0382:1, L0788:1, L0791:1, L0663:1,
				H0144:1, H0593:1, H0689:1, H0659:1, S0406:1, S0037:1, L0745:1, L0779:1, L0752:1, L0755:1, S0394:1,
				L0593:1, S0026:1, H0665:1, H0542:1, H0423:1 and H0506:1.
	HRACD15	706332	823	
452	HRACD80	1309774	462	AR290:353, AR268:210, AR241:164, AR202:124, AR198:111, AR242:111, AR267:111, AR243:105,
				AR313:102, AR203:94, AR246:93, AR213:91, AR270:88, AR096:87, AR201:80, AR200:78, AR300:70,
				AR245:69, AR183:64, AR053:61, AR173:55, AR234:55, AR244:54, AR189:43, AR240:38, AR188:38,
			_	AR193:32, AR289:31, AR231:30, AR194:29, AR207:28, AR205:27, AR206:26, AR228:25, AR266:25,
				AR164:24, AR165:24, AR175:22, AR166:22, AR273:21, AR192:20, AR316:20, AR163:20, AR161:19,
				AR162:19, AR212:19, AR263:19, AR256:18, AR214:18, AR299:18, AR269:17, AR238:16, AR195:16,
				AR247:15, AR055:15, AR052:15, AR191:15, AR223:15, AR222:14, AR281:14, AR264:14, AR265:14,
				AR235:14, AR169:14, AR168:14, AR282:13, AR224:13, AR170:13, AR172:13, AR311:12, AR272:12,
				AR217:12, AR310:12, AR284:12, AR171:12, AR039:12, AR216:12, AR274:12, AR061:11, AR197:11,
				AR174:11, AR185:11, AR180:11, AR204:11, AR271:11, AR251:11, AR196:10, AR186:10, AR249:10,
				AR089:10, AR239:10, AR177:10, AR308:10, AR309:10, AR225:10, AR215:10, AR232:10, AR312:9,
	*			AR295:9, AR221:9, AR181:9, AR315:9, AR237:8, AR292:8, AR033:8, AR254:8, AR261:8, AR288:8,
				AR190:8, AR176:7, AR230:7, AR291:7, AR275:7, AR248:7, AR229:7, AR296:7, AR280:7, AR277:7,
				AR236:7, AR199:7, AR210:7, AR286:6, AR297:6, AR182:6, AR298:6, AR283:6, AR287:6, AR184:6,
				AR226:6, AR253:6, AR060:6, AR285:5, AR227:5, AR178:5, AR259:5, AR258:5, AR294:5, AR104:5,
				AR293:5, AR257:5, AR233:4, AR262:4, AR252:4, AR211:4, AR314:4, AR218:4, AR255:4, AR219:4,
				AR179:4, AR250:3, AR260:3 L0777:2, L0646:1, L0783:1, S0406:1, H0555:1 and L0758:1.

	HRACD80	882163	824	
T	HRACD80	740762	825) 1) VX 1 /) 1 VX 1 =
453	HRDDV47	637650	463	AR186:15, AR206:12, AR194:10, AR241:10, AR244:9, AR052:8, AR273:7, AR202:7, AR246:6, AR061:6,
				AR250:6, AR264:5, AR204:5, AR184:5, AR192:5, AR309:4, AR510:4, AR512:4, AR212:4, AR251:4, AR250:4, AP204:4, AR251:4, AR
_				AR275.4, AR267.4, AR053:3, AR316:3, AR271:3, AR263:3, AR269:3, AR247:3, AR182:3, AR161:3,
				AR162:3, AR163:3, AR270:3, AR171:3, AR265:3, AR215:3, AR185:3, AR252:3, AR268:3, AR277:3,
_				AR299:3, AR289:3, AR172:3, AR308:3, AR165:3, AR284:3, AR164:3, AR292:3, AR175:3, AR249:3,
				AR183:3, AR296:3, AR166:3, AR060:3, AR233:3, AR290:3, AR313:2, AR238:2, AR283:2, AR295:2,
				AR261:2, AR237:2, AR231:2, AR292:2, AR300:2, AR089:2, AR201:2, AR104:2, AR177:2,
				AR096:2, AR173:2, AR232:2, AR197:2, AR236:2, AR181:2, AR201:2, AR203:2, AR294:4, AR1 10:2,
				AR248:2, AR257:2, AR285:2, AR255:2, AR262:1:4, AR241:2, AR26:2, AR256:2, AR250:2, AR257:2, AR2734:2
				AR293:2, AR314:2, AR220:2, AR180:2, AR191:2, AR240.2, AR190:2, AR26:1:2, AR29:2, AR26:1. AR287:1, AR189:1.
				ARCOULL ARCONIL ARCIDITA ARCOLIL ARCOLIL ARCIDITA AR 168:1. ARCSOIL ARCSOIL ARCOLIL AR
				AR218.1 AR216.1 10747.10 S0007.6 L0770.5 H0050:4, S0022:4, H0135:4, H0623:4, L0749:4, S0040:3,
				101260:13 10120:13 H0123:3 H0123:3 H0594:3 H0551:3 L0809:3 H0144:3 S0206:3 L0753:3 H0352:3
				H0295; H0253; 2. H0546; H0150; 2. L0163; 2. H0628; 2. L0435; 2. L0761; 2. L0659; 2. L0789; 2. S0126; 2.
				H0670; 2, 13832; 2, H0696; 2, S3012; 2, L0748; 2, L0439; 2, L0757; 2, S0242; 2, H0713; 1, H0294; 1, T0049; 1,
				H0341:1, S0298:1, S0212:1, S0110:1, H0663:1, H0125:1, S0354:1, S0045:1, S6026:1, L2767:1, H0586:1,
				[13816;1,13499;1,10015;1,H0013;1,H0427;1,L0021;1,H0706;1,H0318;1,H0052;1,H0309;1,H0544;1,
				H0041:1, H0024:1, H0051:1, T0010:1, H0375:1, H0266:1, H0292:1, H0252:1, H0622:1, T0023:1, H0030:1,
				H0644:1, H0124:1, H0087:1, H0412:1, H0100:1, L0351:1, H0560:1, H0281:1, S0210:1, L0506:1, L0637:1,
				[L0800:1, L0662:1, L0767:1, L0794:1, L0804:1, L0775:1, L0375:1, L0378:1, L0806:1, L0655:1, L0807:1,
				[L0657:1, L0783:1, L0368:1, L0666:1, L0438:1, H0682:1, H0658:1, H0539:1, S0044:1, L0611:1, S0028:1,
				S0032: 1. L0754:1. L0750:1. L0777:1. L0731:1. L0758:1. L0759:1. S0011:1. H0665:1, S0194:1 and S0276:1.
454	HRDFD27	\$67004	464	AR104:15. AR039:9. AR313:8. AR096:7, AR089:7, AR235:7, AR060:7, AR185:6, AR218:6, AR055:6,
5				AR180:6. AR161:6. AR162:6. AR163:6, AR226:6, AR219:6, AR033:6, AR299:6, AR173:5, AR165:5,
				AR164:5, AR166:5, AR196:5, AR300:5, AR316:4, AR257:4, AR309:4, AR171:4, AR240:4, AR176:4,
				AR181:4. AR179:4. AR214:4. AR212:4, AR175:4, AR183:4, AR269:4, AR178:4, AR237:4, AR191:4,
				AR275:4, AR282:4, AR262:4, AR239:4, AR277:4, AR182:4, AR264:3, AR236:3, AR247:3, AR229:3,
				AR174:3, AR274:3, AR268:3, AR234:3, AR233:3, AR238:3, AR258:3, AR216:3, AR225:3, AR200:3,
				AR254:3, AR231:3, AR255:3, AR228:3, AR211:3, AR267:3, AR293:3, AR203:3, AR285:3, AR177:3,
				AR296:3, AR283:3, AR169:3, AR294:3, AR266:3, AR190:3, AK290:3, AR291:3, AR189:3, AR497:4,

				AR280:2, AR217:2, AR280:2, AR383:2, AR283:2, AR284:2, AR280:2, AR281:2, AR308:2, AR399:2, AR398:2, AR398:2, AR38:2, AR
				AR270:2, AR272:1, AR271:1, AR295:1, AR260:1, AR061:1, AR195:1, AR215:1, AR256:1, AR193:1
757	UDTAESS	\$10326	465	AP263-641 AP257-462 AR053-448 AR264-444 AR309-397, AR308-339, AR272-269, AR311:237,
}	occurrent of the second	27777		AR312:228, AR246:205, AR212:196, AR254:193, AR213:183, AR250:181, AR253:180, AR197:180,
				AR200:150, AR174:145, AR274:138, AR275:136, AR211:128, AR245:127, AR243:124, AR195:121,
				AR205:119, AR219:118, AR210:117, AR268:107, AR218:107, AR189:103, AR177:100, AR096:99,
				AR240;96, AR198;93, AR201;89, AR191;85, AR269;82, AR190;78, AR203;77, AR175;76, AR188;74,
				AR271:74, AR033:72, AR199:72, AR313:69, AR179:69, AR229:69, AR173:68, AR204:68, AR290:66,
				AR196:65, AR180:63, AR270:63, AR178:63, AR193:61, AR183:60, AR267:59, AR247:57, AR185:54,
				AR181:52, AR176:50, AR300:48, AR165:47, AR161:46, AR242:45, AR162:45, AR104:45, AR166:45,
			-	AR164:45, AR163:44, AR234:43, AR192:42, AR289:41, AR316:39, AR26:39, AR231:39, AR237:38,
				AR255:36, AR288:35, AR182:35, AR230:34, AR256:33, AR039:31, AR282:30, AR261:29, AR238:29,
				AR295.28, AR291.26, AR236.26, AR089.24, AR239.22, AR226.22, AR257.22, AR232.22, AR293.22,
				AR299:21, AR233:21, AR297:21, AR262:21, AR285:21, AR296:20, AR061:20, AR258:19, AR228:19,
				AR060:18, AR224:18, AR214:17, AR223:17, AR287:17, AR207:17, AR235:16, AR222:15, AR227:15,
				AR286:14, AR260:14, AR277:14, AR225:14, AR055:13, AR216:13, AR294:12, AR171:12, AR168:11,
				AR221:10, AR172:10, AR217:10, AR169:9, AR215:9, AR283:7, AR170:7 T0008:1
456	HSATR82	531973	466	AR282:4, AR161:3, AR165:3, AR264:3, AR162:3, AR164:3, AR163:3, AR166:3, AR313:3, AR199:3,
				AR266:3. AR182:3. AR269:3. AR096:3. AR270:2, AR173:2, AR175:2, AR255:2, AR196:2, AR089:2,
				AR178:2, AR277:2, AR274:2, AR293:2, AR213:2, AR262:2, AR225:2, AR216:2, AR060:2, AR195:2,
				AR201:2, AR177:2, AR300:2, AR309:2, AR207:2, AR179:2, AR257:2, AR247:2, AR229:2, AR240:2,
				AR212:2, AR104:2, AR233:2, AR193:2, AR296:2, AR217:2, AR283:2, AR191:1, AR039:1, AR237:1,
				AR316:1, AR275:1, AR172:1, AR258:1, AR288:1, AR285:1, AR185:1, AR239:1, AR297:1, AR291:1,
				AR170:1, AR224:1, AR176:1, AR235:1, AR294:1, AR287:1, AR308:1, AR214:1, AR180:1, AR267:1,
	-			[AR236:1, AR299:1, AR203:1, AR033:1, AR252:1 S0114:2 and L0600:1.
457	HSAUK57	772554	467	AR169:5, AR180:5, AR266:4, AR282:3, AR313:3, AR235:3, AR225:3, AR215:3, AR168:3, AR221:2,
				AR089:2, AR183:2, AR236:2, AR286:2, AR165:2, AR164:2, AR166:2, AR291:2, AR178:2, AR277:2,
				[AR181:2, AR216:2, AR212:2, AR274:2, AR162:1, AR271:1, AR287:1, AR247:1, AR189:1, AR195:1,
				AR196:1, AR217:1, AR182:1, AR179:1, AR193:1, AR295:1, AR227:1, AR231:1, AR268:1, AR257:1,
				AR300:1 S0114:1 and H0436:1.
	HSAUK57	490870	826	
458	HSAUL82	490879	468	AR313:6, AR192:6, AR245:6, AR169:6, AR198:5, AR165:5, AR161:5, AR162:5, AR089:5, AR164:5,

				AR163:5, AR166:5, AR096:5, AR039:5, AR275:4, AR178:4, AR204:4, AR309:4, AR247:4, AR176:4,
				AR177:3, AR201:3, AR312:3, AR213:3, AR200:3, AR242:3, AR183:3, AR253:3, AR269:3, AR185:3, AR264:3, AR175:3, AR263:3, AR196:3, AR229:3, AR300:3, AR283:3, AR283:3, AR269:3, AR269:3, AR300:3, AR283:3, AR283:3, AR269:3, AR269:3, AR283:3, AR2
				AR179:3, AR236:3, AR257:3, AR274:3, AR233:3, AR173:3, AR180:3, AR261:3, AR250:3, AK000:3,
				AR237:3, AR290:3, AR200:3, AR200:3, AR189:2, AR182:2, AR228:2, AR267:2, AR238:2, AR268:2,
				AR234:2, AR181:2, AR174:2, AR262:2, AR258:2, AR308:2, AR270:2, AR252:2, AR191:2, AR231:2,
				AR255:2, AR235:2, AR243:2, AR271:2, AR230:2, AR287:2, AR212:2, AR288:2, AR285:2, AR203:2,
				AR226:2, AR290:2, AR033:2, AR246:2, AR277:2, AR188:2, AR239:2, AR11:2, AR106:2, AR262:2,
				AK2222, AK23224, AK22711, AK24011, AK17011, AK31111, AK32211, AK33611.
450	HSAVD46	456536	469	AR176:4, AR181:4, AR178:3, AR197:3, AR269:3, AR165:3, AR221:3, AR162:3, AR164:3, AR207:3,
}	2	2		AR272:3, AR161:3, AR182:3, AR245:3, AR175:3, AR270:3, AR268:2, AR174:2, AR267:2, AR177:2,
				AR253:2, AR191:2, AR104:2, AR173:2, AR190:2, AR225:2, AR188:2, AR188:2, AR310:2, AR311:2,
				AR183:2, AR179:2, AR204:2, AR275:2, AR166:2, AR216:2, AR212:2, AR060:1, AR271:1, AK170:1,
				AR240:1, AR189:1, AR096:1, AR163:1, AR180:1, AR261:1, AR283:1, AR277:1, AR247:1, AR033:1,
	•			AR195:1, AR217:1, AR089:1, AR312:1, AR316:1, AR055:1, AR233:1, AR289:1, AR199:1, AR185:1
				H0170.1. S0114:1, L0769:1, L0784:1, L0805:1, L0790:1, H0435:1, H0648:1, L0779:1 and L0777:1.
460	HSAVH65	545459	470	AR089:10, AR240:9, AR060:9, AR055:9, AR313:9, AR277:8, AR185:7, AR300:6, AR282:6, AR299:6,
3	2011			AR104:6, AR316:5, AR218:5, AR219:5, AR283:4, AR096:4, AR039:4 S0114:2, H0686:1, L2255:1, L0769:1,
				1.0644:1. L.0662:1. L.0774:1, L.0666:1, H0659:1, L.0750:1 and S0436:1.
1461	HSAVK10	561435	471	AR039:38. AR313:35, AR096:27, AR089:21, AR299:19, AR185:16, AR277:16, AR104:13, AR316:13,
ř	O THE COURT		• :	AR162:12, AR300:12, AR240:11, AR161:11, AR060:11, AR173:11, AR163:10, AR165:10, AR218:10,
				AR219:10, AR164:10, AR166:10, AR262:9, AR282:9, AR196:8, AR175:8, AR238:8, ARC453:8, ARZ47:1,
				AR178:7, AR229:7, AR179:7, AR264:7, AR257:7, AR293:7, AR191:7, AR269:6, AR182:6, AK238:0,
				AR181:6, AR180:6, AR234:6, AR236:6, AR174:6, AR053:6, AR233:6, AR256:6, AR294:6, AR283:3,
	_			AR297:5, AR199:5, AR225:5, AR230:5, AR2755:5, AR177:5, AR2/4:9, AR287:3, AR280:3,
				AR263:5, AR270:5, AR309:5, AR203:4, AR183:4, AR212:4, AR200:4, AR1/6:4, AR285:4, AR312:4,
				AR231:4, AR288:4, AR296:4, AR286:4, AR268:4, AR033:4, AR291:4, AR228:4, AR189:4, AK267:4,
				AR266:3, AR192:3, AR260:3, AR239:3, AR308:3, AR237:3, AR213:3, AR188:3, AR214:3, AR290:3,
				AR295:3, AR271:3, AR272:3, AR311:3, AR190:3, AR227:2, AR289:2, AR193:2, AR221:2, AK223:2,
				AR210:2, AR232:2, AR245:2, AR197:2, AR211:2, AR205:2, AR207:2, AR222:2, AK256:2, AK061:1,
				AR235:1, AR224:1, AR201:1 S0114:1
462	HSAWZ41	580872	472	AR313:82, AR039:58, AR173:49, AR096:43, AR196:40, AR247:40, AR162:40, AR299:40, AR103:37,

WO 02/102994 PCT/US02/08278

				JAR258:38, AR161:37, AR242:37, AR300:37, AR236:37, AR089:37, AR164:37, AR163:36, AR166:35,
				AR240:35, AR180:33, AR199:32, AR229:32, AR264:31, AR175:31, AR185:31, AR257:29, AR179:29,
				AR178:29, AR312:28, AR262:28, AR183:27, AR293:27, AR234:26, AR174:26, AR193:26, AR177:26,
				AR316:24, AR182:24, AR218:24, AR285:24, AR191:23, AR270:23, AR181:23, AR277:23, AR269:23,
				AR219:23, AR296:23, AR226:23, AR192:22, AR275:22, AR033:22, AR233:22, AR200:21, AR189:21,
			_	AR204:21, AR176:21, AR238:20, AR104:20, AR297:19, AR203:19, AR261:19, AR287:19, AR294:19,
				[AR268:18, AR060:18, AR053:18, AR286:18, AR255:17, AR212:17, AR260:17, AR288:16, AR290:16,
				AR188:16, AR309:16, AR231:15, AR197:15, AR237:15, AR230:15, AR245:15, AR295:15, AR308:15,
				AR267:14, AR195:14, AR266:14, AR282:14, AR201:14, AR213:14, AR235:14, AR254:14, AR243:14,
				[AR228:13, AR263:13, AR271:13, AR256:13, AR239:13, AR198:12, AR227:12, AR291:12, AR205:11,
				AR272:10, AR190:10, AR055:9, AR250:9, AR252:9, AR207:9, AR289:8, AR211:8, AR283:7, AR232:7,
			_	JAR246:7, AR311:6, AR253:5, AR061:5, AR210:5, AR171:4, AR221:3, AR274:2, AR168:2, AR169:1
			_	H0305:4, H0589:2 and S0114:1.
463	HSAXA83	545051	473	AR215:9, AR253:8, AR252:7, AR168:6, AR163:6, AR162:6, AR250:6, AR216:6, AR172:6, AR161:6,
				JAR264:6, AR242:6, AR221:6, AR269:5, AR183:5, AR291:5, AR055:5, AR270:5, AR224:5, AR060:5,
				AR268:5, AR170:5, AR266:5, AR217:5, AR231:5, AR222:5, AR182:4, AR240:4, AR204:4, AR176:4,
	•		_	AR214:4, AR290:4, AR225:4, AR223:4, AR309:4, AR201:4, AR235:4, AR181:4, AR271:4, AR213:4,
				AR205:4, AR165:4, AR283:4, AR282:4, AR243:4, AR219:4, AR164:4, AR236:4, AR089:4, AR166:4,
				AR263:4, AR212:4, AR104:4, AR288:4, AR294:4, AR257:3, AR316:3, AR096:3, AR179:3, AR296:3,
				JAR267:3, AR193:3, AR261:3, AR254:3, AR196:3, AR245:3, AR171:3, AR255:3, AR275:3, AR207:3,
			_	AR185:3, AR229:3, AR173:3, AR238:3, AR191:3, AR237:3, AR289:3, AR175:3, AR218:3, AR180:3,
			_	AR277:3, AR200:3, AR299:3, AR228:3, AR295:3, AR233:3, AR239:3, AR287:3, AR272:3, AR178:3,
			_	AR039:3, AR293:3, AR188:3, AR286:3, AR177:3, AR247:3, AR190:3, AR174:3, AR285:2, AR312:2,
				JAR230:2, AR234:2, AR313:2, AR053:2, AR274:2, AR300:2, AR260:2, AR246:2, AR189:2, AR311:2,
			_	AR061:2, AR033:2, AR232:2, AR308:2, AR199:2, AR210:2, AR227:2, AR226:1, AR258:1, AR256:1,
			_	AR297:1, AR262:1, AR192:1 H0013:2, H0375:2, H0521:2, S0114:1, S0134:1, H0341:1, S0444:1, H0728:1,
				H0735:1, T0110:1, H0046:1, H0457:1, H0050:1, H0553:1, H0202:1, H0396:1, L0794:1, L0803:1, L0776:1,
				L5623:1, L0789:1, L0709:1, H0520:1, S0044:1, S0436:1, L0588:1 and H0653:1.
464	HSAYM40	462797	474	AR250:6, AR176:6, AR309:5, AR245:5, AR053:5, AR312:5, AR162:5, AR161:5, AR163:5, AR263:4,
				AR246:4, AR308:4, AR198:4, AR165:4, AR166:4, AR166:4, AR193:3, AR243:3, AR215:3, AR264:3,
				AR195:3, AR213:3, AR275:3, AR311:3, AR180:3, AR173:3, AR204:3, AR271:3, AR272:3, AR055:3,
				AR060:3, AR252:3, AR270:2, AR171:2, AR201:2, AR313:2, AR300:2, AR205:2, AR291:2, AR183:2,
				AR282:2, AR261:2, AR172:2, AR283:2, AR274:2, AR212:2, AR269:2, AR089:2, AR175:2, AR233:2,
				AR178:2, AR033:2, AR185:2, AR259:2, AR257:2, AR182:1, AR247:1, AR260:1, AR290:1, AR168:1,

				AR104:1, AR316:1, AR240:1, AR039:1, AR235:1, AR239:1, AR216:1, AR228:1, AR255:1, AR218:1, AR267:1, AR170:1, AR210:1 H0255:2, S0114:1 and L0766:1.
465	HSDAJ46	692358	475	AR162:9, AR161:9, AR163:8, AR165:7, AR215:7, AR164:7, AR166:7, AR261:7, AR288:7, AR221:7, AR255:6, AR297:6, AR180:6, AR176:6, AR089:5, AR216:5, AR181:5, AR184:5, AR186:5, AR214:5, AR255:6, AR297:6, AR180:6, AR176:6, AR2085:5, AR217:5, AR1724:5, AR224:5, AR060:5, AR178:4, AR287:4, AR257:4, AR287:4, AR222:4, AR213:4, AR213:4, AR213:4, AR298:4, AR170:4, AR170:4, AR185:4, AR240:4, AR266:3, AR251:3, AR298:3, AR240:4, AR266:3, AR266:3, AR286:3, AR286:1, AR286:1, AR263:1, AR263:1, AR263:1, AR263:1, AR263:1, L0598:1, L0598:1, L0598:1, L0598:1, L0598:1, L0598:1, L0698:1, L0698:1, L0598:1, L0698:1, L
466	НЅ DEK49	1352253	476	AR290:45, AR268:37, AR240:23, AR267:22, AR269:16, AR270:14, AR234:10, AR055:10, AR238:10, AR184:9, AR292:8, AR291:8, AR179:8, AR183:8, AR284:7, AR177:7, AR182:6, AR060:6, AR299:5, AR295:5, AR296:3, AR296:3, AR296:3, AR296:3, AR296:3, AR296:3, AR296:3, AR296:3, AR296:2, AR296:1, AR296:1, AR296:1, AR277:1, AR296:1, AR296:1, AR296:1, AR277:1, AR296:1, AR296:2, L0796:2, L0796:2, L0796:2, L0796:2, L0796:1, H0014:1, H0170:1, S0116:1, S0354:1, H0674:1, H0090:1, H0063:1, S0280:1, H0590:1, H0681:1, L0770:1, L07
	HSDEK49	625998	827	
467	HSDER95	664502	477	AR205:59, AR274:47, AR309:35, AR312:34, AR245:33, AR271:32, AR308:30, AR272:27, AR247:26, AR215:26, AR053:26, AR246:25, AR311:25, AR212:24, AR216:23, AR263:23, AR162:23, AR161:22, AR188:22, AR225:22, AR164:22, AR163:22, AR165:21, AR214:21, AR213:21, AR217:21, AR192:20, AR243:20, AR264:20, AR166:19, AR196:19, AR198:18, AR254:16, AR197:16, AR189:16, AR221:16,

WO 02/102994 PCT/US02/08278

				AR313:15, AR211:15, AR210:15, AR178:15, AR183:15, AR177:14, AR191:14, AR175:14, AR269:14, AR174:14, AR224:14, AR176:13, AR222:13, AR170:13, AR199:13, AR179:13, AR242:13, AR275:13, AR218:13, AR174:12, AR190:12, AR290:12, AR290:11, AR290:
				AR168:11, AR291:11, AR219:11, AR268:11, AR223:11, AR195:10, AR181:10, AR172:10, AR180:10, AR270:10, AR204:10, AR253:9, AR185:9, AR201:9, AR193:9, AR033:9, AR096:9, AR231:9,
				AR203:9, AR293:9, AR261:8, AR266:8, AR171:8, AR267:8, AR285:8, AR288:8, AR250:8, AR300:8,
				AR255:8, AR226:7, AR200:7, AR296:7, AR316:7, AR287:7, AR289:7, AR237:7, AR262:7, AR229:7,
				AR282:7, AR182:6, AR235:6, AR277:6, AR297:6, AR230:6, AR239:6, AR234:6, AR232:5, AR257:5,
				[AR227:4, AR169;4, AR260:3, AR283:3, AR236:2, AR055:1 L0588:4, S0442:1, H0427:1, L0769:1, L0773:1, [L0773:1, L077:1, L0791:1, L0743:1, H0547:1, L0756:1, and S0031:1
468	HSDEZ20	1352287	478	AR176:5, AR252:5, AR266:5, AR215:4, AR223:4, AR181:4, AR197:4, AR161:4, AR162:4, AR264:4,
	_			AR163:3, AR235:3, AR165:3, AR164:3, AR166:3, AR309:3, AR207:3, AR267:3, AR214:3, AR228:3,
		-		AR182:3, AR254:3, AR178:3, AR275:3, AR295:3, AR257:3, AR179:3, AR271:3, AR183:3, AR268:3,
				AR172:3, AR201:3, AR193:3, AR236:3, AR245:3, AR240:3, AR233:3, AR229:3, AR261:3, AR262:3,
				AR288:3, AR289:3, AR180:2, AR175:2, AR089:2, AR296:2, AR231:2, AR299:2, AR274:2, AR191:2,
				AR216:2, AR199:2, AR239:2, AR291:2, AR173:2, AR286:2, AR238:2, AR269:2, AR237:2, AR294:2,
				AR270:2, AR200:2, AR060:2, AR096:2, AR196:2, AR168:2, AR316:2, AR174:2, AR287:2, AR195:2,
				AR290:2, AR055:2, AR227:2, AR177:2, AR297:2, AR203:2, AR222:2, AR300:2, AR283:2, AR234:2,
				AR185:2, AR190:2, AR247:2, AR293:2, AR217:2, AR282:2, AR224:2, AR061:2, AR053:2, AR285:2,
				AR226:1, AR277:1, AR312:1, AR205:1, AR189:1, AR189:1, AR169:1, AR232:1, AR219:1, AR033:1,
				AR230:1, AR260:1, AR210:1, AR211:1, AR308:1, AR104:1, AR171:1 S0031:1
	HSDEZ20	704101	828	
469	HSDJA15	795252	479	AR244:23, AR281:23, AR202:20, AR284:18, AR194:18, AR206:18, AR280:17, AR315:16, AR273:16,
				AR241:15, AR263:15, AR310:14, AR264:13, AR314:13, AR243:12, AR251:12, AR205:12, AR265:12,
				AR292:12, AR274:11, AR198:11, AR246:11, AR248:11, AR184:11, AR271:11, AR298:11, AR283:10,
				AR192:10, AR289:10, AR033:9, AR052:9, AR286:9, AR186:9, AR295:9, AR053:9, AR309:9, AR259:9,
				AR282:9, AR096:9, AR218:9, AR312:9, AR204:8, AR275:8, AR104:8, AR311:8, AR252:8, AR313:8,
				AR290:8, AR253:7, AR254:7, AR266:7, AR207:7, AR285:7, AR299:7, AR249:7, AR247:7, AR039:7,
				AR219:7, AR213:7, AR291:7, AR183:6, AR293:6, AR177:6, AR245:6, AR055:6, AR308:6, AR061:6,
				AR250:6, AR240:6, AR256:6, AR175:6, AR268:6, AR269:5, AR294:5, AR300:5, AR277:5, AR258:5,
				AR195:5, AR165:5, AR089:5, AR185:5, AR316:5, AR164:5, AR166:5, AR270:5, AR296:5, AR161:5,
				AR162:4, AR163:4, AR223:4, AR267:4, AR232:4, AR212:4, AR060:4, AR235:4, AR182:4, AR176:4,
				AR238:4, AR19/:4, AR193:3, AR109:3, AR233:3, AR229:3, AR224:3, AR242:3, AR242:3, AR231:3,

			AR227:3, AR179:3, AR237:3, AR201:3, AR180:3, AR234:2, AR174:2, AR196:2, AR272:2, AR214:2, AR273:3, AR251:3, AR287:2, AR287:2, AR181:2, AR189:1, AR189:1, AR189:1, AR261:1,
			AR191:1, AR172:1, AR188:1, AR236:1, AR239:1
HSDSB09	1301498	480	AR060:10, AR089:9, AR055:7, AR104:7, AR313:5, AR039:4, AR218:4, AR299:4, AR184:4, AR310:4, AR096:4, AR182:4, AR219:3, AR294:3, AR185:3, AR291:3, AR212:3, AR251:3, AR284:3, AR283:3, AR282:3, AR222:3, AR269:3, AR286:3, AR298:2, AR266:2, AR052:2, AR262:2,
			AR249:2, AR311:2, AR292:2, AR309:2, AR295:2, AR233:2, AR236:2, AR296:2, AR268:2, AR267:2,
			AK233:2, AK2/0:2, AR233:2, AR163:2, AR239:2, AR235:1, AR231:1, AR215:1, AR277:1, AR225:1,
			AR290:1, AR274:1, AR293:1, AR163:1, AR247:1, AR310:1, AR217:1, AR226:1, AR238:1, AR240:1, AR265:1, AR237:1, AR264:1, AR224:1, AR229:1, AR053:1, AR172:1, AR271:1 L0803:14, L0774:4,
			L0770:2, H0409:1, H0331:1 and H0555:1.
HSDSB09	463645	829	CHICAL CLOSAL COMMENT COMMENT
HSDSE75	545057	481	AR096:3, AR225:3, AR266:3, AR055:3, AR060:3, AR309:2, AR170:2, AR222:2, AR104:2, AR214:2, AR228:1,
			AR254;2, AR103:2, AR101:2, AR216:1, AR240:1, AR290:1, AR175:1, AR185:1, AR201:1, AR193:1,
			AR200:1, AR164:1, AR166:1, AR316:1, AR168:1, AR230:1, AR165:1, AR218:1 H0646:2, L0783:2,
			LO/51:2, H0222:1, L3643:1, H0403:1, H0333:1, H0333:1, H3331:1, L334:1; L347:1; L343:1; L343:1; L343:1; L343:1; L343:1; L343:1; L344:1;
HSFAM31	552789	482	AR173:8, AR178:6, AR183:6, AR313:6, AR293:6, AR229:6, AR180:6, AR182:5, AR270:5, AR175:5,
		}	AR269:5, AR162:5, AR161:5, AR181:5, AR163:5, AR257:5, AR291:4, AR282:4, AR176:4, AR238:4,
			AR165:4, AR226:4, AR164:4, AR195:4, AR228:4, AR196:4, AR296:4, AR272:4, AR236:4, AR173:4,
			AR203:4, AR206:4, AR199:4, AR24::4, AR206:4, AR219:3, AR213:3, AR213:3, AR234:3, AR239:3, AR239:3,
			AR290:3, AR290:3, AR275:3, AR196:3, AR174:3, AR287:3, AR231:3, AR299:3, AR189:3, AR193:3,
			AR262:3, AR295:3, AR240:3, AR237:3, AR096:3, AR053:3, AR227:3, AR170:3, AR289:3, AR200:3,
			AR218:3, AR255:2, AR260:2, AR288:2, AR309:2, AR089:2, AR261:2, AR188:2, AR219:2, AR210:2,
			AR250.2, AR033.2, AR185.2, AR316.2, AR277.2, AR203.2, AR312.2, AR201.2, AR224.2, AR060.2,
			AR190:2, AR232:2, AR216:2, AR207:2, AR168:2, AR172:1, AR311:1, AR055:1, AR256:1, AR236:1,
			AR061:1, AR192:1, AR205:1, AR205:1, AR104:1 H0154:1 and H0087:1.
HSHAX21	612823	483	AR264:11, AR309:8, AR253:8, AR250:8, AR252:8, AR254:7, AR308:7, AR263:7, AR172:7, AR271:7,
			AR162:7, AR272:6, AR311:6, AR165:6, AR195:6, AR245:6, AR161:6, AR166:6, AR163:5, AK312:5,
			AR212:5, AR214:5, AR164:5, AR176:5, AR275:5, AR205:5, AR197:5, AR226:5, AR282:5, AR053:5,
			AR089:5, AR213:4, AR169:4, AR181:4, AR170:4, AR268:4, AR171:4, AR198:4, AR192:4, AR090:4,

				AR174:4, AR290:4, AR269:4, AR189:4, AR177:4, AR196:3, AR173:3, AR201:3, AR224:3, AR246:3, AR222:3, AR316:3, AR168:3, AR300:3, AR223:3, AR1823:3, AR274:3, AR180:3, AR229:3, AR217:3,
				AR216:3, AR243:3, AR313:3, AR204:3, AR178:3, AR190:3, AR039:3, AR255:3, AR238:3, AR188:3, AR060:3, AR193:3, AR207:2, AR296:2, AR191:2, AR191:2, AR185:2, AR185:2, AR240:2, AR219:2,
				AR239:2, AR231:2, AR262:2, AR247:2, AR233:2, AR287:2, AR299:2, AR257:2, AR289:2, AR232:2,
				AK267:2, AK033:2, AK288:2, AK199:2, AK266:2, AK200:2, AK175:2, AK061:2, AK179:2, AK053:2, AR236:2, AR337:2, AR227:1, AR104:1, AR285:1, AR293:1, AR234:1, AR203:1, AR210:1, AR277:1
				L0754:6, S0422:4, L0803:4, L0766:3, L0659:3, H0638:2, S0442:2, S0360:2, H0392:2, L0794:2, L0649:2,
				L0806:2, L0518:2, L0663:2, L0665:2, H0659:2, L0759:2, S0436:2, L0588:2, L0605:2, H0657:1, S0356:1,
				S0444:1, H0747:1, L0717:1, L3388:1, H0600:1, H0156:1, H0251:1, H0375:1, S0003:1, H0032:1, H0634:1,
				H0616:1, H0561:1, L3904:1, L0773:1, L0662:1, L0768:1, L0388:1, L0775:1, L0655:1, L0661:1, L0666:1,
				S0053:1, L0438:1, H0547:1, H0436:1, S0037:1, L0748:1, L0779:1, L0731:1, L0758:1, L0581:1 and S0026:1.
474	HSIAS17	1352191	484	AR273:24, AR251:22, AR310:16, AR265:15, AR274:15, AR309:14, AR052:13, AR184:12, AR053:11,
				AR312:11, AR213:11, AR243:11, AR241:10, AR266:10, AR186:10, AR282:9, AR248:9, AR313:9, AR292:8,
				AR271:8, AR270:8, AR263:8, AR275:8, AR268:8, AR219:7, AR247:7, AR252:7, AR244:7, AR198:7,
				AR249:7, AR269:7, AR175:7, AR245:6, AR183:6, AR253:6, AR204:6, AR197:6, AR254:6, AR240:6,
				AR162:6, AR161:6, AR246:6, AR192:6, AR296:6, AR218:6, AR163:6, AR267:6, AR290:6, AR096:5,
				AR205:5, AR061:5, AR295:5, AR165:5, AR185:5, AR256:5, AR164:5, AR206:5, AR259:5, AR166:5,
				AR177:5, AR299:5, AR293:5, AR055:5, AR291:4, AR033:4, AR039:4, AR207:4, AR089:4, AR316:4,
				AR294:4, AR195:4, AR250:4, AR202:4, AR285:4, AR060:4, AR217:4, AR300:4, AR194:4, AR231:4,
				AR238:4, AR257:4, AR201:4, AR283:4, AR221:3, AR277:3, AR264:3, AR176:3, AR229:3, AR179:3,
				AR178:3, AR212:3, AR272:3, AR236:3, AR193:3, AR193:3, AR289:3, AR181:3, AR169:3, AR226:3,
				AR234:3, AR237:3, AR182:3, AR225:3, AR104:3, AR258:3, AR255:3, AR180:3, AR196:3, AR311:3,
				AR235:3, AR170:3, AR168:3, AR297:3, AR280:3, AR188:3, AR262:2, AR200:2, AR288:2, AR308:2,
				AR287:2, AR233:2, AR199:2, AR286:2, AR261:2, AR216:2, AR190:2, AR227:2, AR203:2, AR173:2,
				AR191:2, AR228:2, AR172:2, AR298:2, AR284:2, AR174:2, AR230:2, AR315:2, AR223:2, AR189:2,
				AR171:2, AR239:2, AR224:1, AR314:1, AR211:1, AR210:1, AR260:1, AR222:1, AR242:1 H0657:2,
				L0748:2, L0758:2, S0434:2, S0436:2, S0418:1, S0408:1, H0747:1, H0497:1, H0036:1, H0253:1, H0457:1,
				H0081:1, H0553:1, H0181:1, H0598:1, H0135:1, H0412:1, H0652:1, S0002:1, L5623:1, H0666:1, H0552:1,
				H0187:1, H0436:1, H0595:1 and S0424:1.
	HSIAS17	514183	830	
475	HSIDX71	1033671	485	AR272:11, AR263:10, AR224:9, AR253:8, AR172:7, AR246:7, AR264:7, AR245:7, AR195:7, AR225:7,
				AR309:7, AR269:7, AR216:7, AR311:6, AR053:6, AR221:6, AR268:6, AR204:6, AR212:6, AR223:6,
				AK253:0, AK282:0, AK312:0, AK101:0, AK103:0, AK102:0, AK313:0, AK214:3, AK308:3, AK2/4:3,

				AR199:5, AR217:5, AR197:5, AR222:5, AR096:5, AR250:5, AR193:5, AR177:5, AR270:5, AR229:5, AP109:5, AP109:5, AR178:5, AR201:5, AR168:5, AR178:5, AR108:5, AR176:5, AR291:4,
				AR1913, AR1013, AR165:4, AR196:4, AR271:4, AR215:4, AR247:4, AR182:4, AR316:4, AR164:4,
	-			AR243:4, AR267:4, AR290:4, AR205:4, AR275:4, AR295:4, AR255:4, AR175:4, AR254:4, AR166:4,
				AK188:4, AK228:4, AK237:4, AK208:4, AK208:3, AK189:3, AR060:3, AK231:3, AK238:3, AK288:3,
				AR171:3, AR297:3, AR233:3, AR203:3, AR230:3, AR190:3, AR262:3, AR285:3, AR055:3, AR239:3,
				AR226:3, AR200:3, AR185:3, AR252:3, AR240:3, AR281:2, AR231:2, AR100:2, AR23-3-3, AR233-3
				AR277:2, AR104:2, AR218:2, AR294:2, AR061:2, AR210:2, AR234:2, AR221:2, AR235:2, AR235:2, AR255:2, AR295:1, AR219:1, AR219:1, AR211:1, AR296:1 S0001:1, H0036:1 and L0667:1.
	HSIDX71	902162	831	// OUD 4:
476	HSKDA27	1352409	486	AR039:106, AR104:103, AR055:103, AR240:102, AR060:87, AR096:84, AR282:77, AR283:67, AR300:66,
				AR316:57, AR185:48, AR219:45, AR218:44, AR089:40, AR295:30, AR217:34, AR315:31 30212:13; AR316:57, AR185:48, AR219:45, AR218:44, AR089:40, AR295:30, AR217:534, AR315:31
				\$0126:12, L0777:11, \$0027:10, \$0028:10, \$0230:7, H0717:9, L0002:9, L0747:4, \$0236:3, \$0226:3, \$0236:3,
				S0210:3, L0807:3, S0390:3, S0037:3, S3014:3, L0740:3, S0192:3, H0295:2, H0486:2, H0706:2, H0309:2,
				H0023:2, H0373:2, H0266:2, H0039:2, H0038:2, L0598:2, L3872:2, H0689:2, L0757:2, L0759:2, L0599:2,
				S0011:2, S0040:1, L2906:1, S0298:1, H0661:1, H0663:1, H0662:1, S0420:1, S0330:1, S0420:1, S04
				1,2338:1, 50046:1, H0411:1, H0550:1, H0586:1, H0587:1, H0333:1, T0040:1, 10060:1, H0427:1, H023:1:1,
				H0150:1, H0050:1, H0014:1, H0188:1, S0214:1, H0428:1, H0622:1, T0006:1, H0533:1, H0528:1, H0124:1,
				H0087:1, H0551:1, T0067:1, H0413:1, T0069:1, S0440:1, L0705:1, L0705:1, L070:1,
				L0773:1, L0768:1, L0794:1, L0386:1, L0774:1, L0775:1, L0375:1, L0803:1, L0776:1, L0768:1, L0768:1, L0768:1, L0768:1, L0778:1, L07
				L0519:1, L0367:1, L0790:1, L0666:1, L0663:1, L2263:1, L0565:1, S0148:1, H0726:1, H0724:1, L0438:1,
				H0519:1, S0152:1, S0454:1, H0521:1, H0696:1, S3012:1, S0124:1, L0459:1, L0730:1, 110252:1, S0250:1, H0668:1, H0667:1, S0242:1, S0276:1 and L3603:1.
	HSKDA27	1074734	832	
	HSKDA27	872570	833	COOLAR TO MAIN TO THE TOTAL TOT
477	HSKHZ81	1307105	487	AR218:51, AR219:48, AR210:39, AR197:35, AR275:35, AR195:29, AR211:21, AR111:24, AR198:24,
				AR089:21, AR175:19, AR096:19, AR191:19, AR282:19, AR192:16, AR206:16, AR307:16, AR027:13,
				AKZ40:18, AKI /0:16, AKI /4:17, AKI02:13, AKI/1:13, AK240:12, AK243:12, AK201:12, AK269:11,
				AR222.13, AR170.11, AR253.11, AR250.11, AR193.11, AR053.11, AR055.11, AR178.11, AR173.11,
				AR224:10, AR188:10, AR270:10, AR182:10, AR313:10, AR245:10, AR267:10, AR264:9, AR277:9, AR181:9,
				AR161:9, AR162:9, AR308:9, AR163:9, AR311:8, AR196:8, AR203:8, AR180:8, AR207:9, AR312:9,

				AR225-8 AR200-7 AR263-7 AR272-7 AR224-7 AR266-7 AR247-7 AR199-7 AR283-7
				AR254:7, AR221:7, AR165:7, AR288:7, AR291:6, AR238:6, AR255:6, AR164:6, AR229:6, AR203:6,
				AR213:6, AR289:6, AR166:6, AR170:6, AR179:6, AR231:6, AR223:6, AR033:5, AR172:5, AR212:5,
				AR214:5, AR261:5, AR228:5, AR293:5, AR215:5, AR204:5, AR171:5, AR257:5, AR296:4, AR233:4,
				AR295:4, AR287:4, AR237:4, AR239:4, AR297:4, AR168:4, AR234:4, AR256:4, AR061:4, AR216:4,
				AR226:4, AR236:3, AR230:3, AR260:3, AR294:3, AR262:3, AR286:3, AR217:3, AR285:3, AR258:3,
				AR232:2, AR227:2, AR169:1 H0494:7, H0586:5, S0330:5, S0003:3, H0547:3, L3649:2, H0602:2, H0587:2,
				S0344:2, L0806:2, H0521:2, L0740:2, L0754:2, L0747:2, H0170:1, S0114:1, S0418:1, S0476:1, H0772:1,
				H0013:1, T0115:1, T0110:1, H0081:1, S0250:1, H0622:1, S0368:1, H0628:1, H0708:1, H0135:1, H0623:1,
				H0633:1, S0208:1, S0422:1, L0648:1, L0376:1, L5623:1, H0781:1, L0565:1, H0519:1, H0689:1, H0435:1,
				S0328:1, S3012:1, S3014:1, S0028:1 and L0757:1.
	HSKHZ81	552233	834	
478	HSLCQ82	1352226	488	AR05557, AR060:6, AR104:6, AR089:6, AR283:6, AR096:6, AR161:5, AR162:5, AR282:5, AR163:5,
				AR039:5, AR218:5, AR316:5, AR219:5, AR269:4, AR277:4, AR176:4, AR309:4, AR300:4, AR164:4,
				JR165:4, AR275:4, AR240:4, AR266:4, AR299:4, AR214:4, AR235:4, AR272:4, AR166:4, AR183:4,
				AR173:3, AR177:3, AR250:3, AR185:3, AR225:3, AR214:3, AR178:3, AR257:3, AR267:3, AR236:3,
				AR182:3, AR270:3, AR313:3, AR181:3, AR221:3, AR175:3, AR191:3, AR239:3, AR291:3, AR190:3,
				AR228:3, AR229:3, AR189:3, AR180:3, AR296:3, AR255:3, AR171:3, AR172:3, AR287:3, AR243:3,
				AR233:3, AR268:2, AR261:2, AR262:2, AR238:2, AR196:2, AR237:2, AR231:2, AR264:2, AR210:2,
				JAR293:2, AR224:2, AR288:2, AR289:2, AR290:2, AR295:2, AR174:2, AR230:2, AR179:2, AR188:2,
				AR200:2, AR285:2, AR246:2, AR294:2, AR061:2, AR286:2, AR263:2, AR247:2, AR053:2, AR232:2,
				AR223:2, AR203:2, AR271:2, AR227:2, AR226:2, AR311:2, AR168:2, AR033:2, AR216:2, AR234:2,
				AR211:1, AR312:1, AR260:1, AR297:1, AR222:1, AR205:1, AR258:1, AR217:1 L0744:2, L0751:2,
				L0777.2, H0580:1, H0013:1, S0036:1, L0659:1, S0028:1, L0779:1, L0780:1 and L0596:1.
	HSLCQ82	589526	835	
479	HSLJG37	1016920	489	AR282:7, AR207:5, AR309:5, AR205:5, AR204:5, AR224:4, AR161:3, AR162:3, AR163:3, AR217:3,
				AR246:3, AR257:3, AR201:3, AR275:3, AR272:3, AR060:3, AR089:3, AR176:3, AR197:3, AR221:3,
				AR214:3, AR180:3, AR299:3, AR198:2, AR165:2, AR270:2, AR185:2, AR283:2, AR166:2, AR230:2,
				AR308:2, AR312:2, AR055:2, AR264:2, AR177:2, AR237:2, AR181:2, AR096:2, AR193:2, AR178:2,
				AR271:2, AR296:2, AR285:2, AR216:2, AR289:2, AR268:2, AR295:2, AR173:2, AR179:2, AR316:2,
				AR231:2, AR287:2, AR226:2, AR033:2, AR247:2, AR232:2, AR288:2, AR267:2, AR195:2, AR227:2,
				AR293:2, AR174:2, AR233:2, AR229:2, AR225:2, AR222:2, AR238:2, AR263:2, AR061:1, AR164:1,
				AR269:1, AR182:1, AR291:1, AR290:1, AR277:1, AR236:1, AR311:1, AR239:1, AR274:1, AR172:1,
				JAR175:1, AR297:1, AR286:1, AR235:1, AR252:1, AR394:1, AR191:1, AR240:1 L0717:1, H0428:1,

				H0598:1, H0413:1 and S0390:1.
	HSLJG37	852244	836	
	HSLJG37	895206	837	CONT. CONT. CHOCK CASE
480	HSNAB12	542649	490	AR168:3, AR291:3, AR222:3, AR267:3, AR245:2, AR215:2, AR225:2, AR207:2, AK2/0:2, AK288:2, AR053:2, AR264:1, AR170:1, AR196:1, AR286:1, AR296:1, AR294:1, AR290:1, AR170:1, AR196:1, AR296:1, AR2
481	HSODE04	906081	491	AR039:3, AR176:3, AR180:3, AR217:2, AR270:2, AR170:2, AR193:2, AR214:2, AR282:1, AR266:1, AR060:1, AR216:1, AR213:1, AR277:1, AR195:1, AR178:1, AR210:1, AR171:1, AR096:1 H0595:1
	HSODE04	906498	838	Andre Andre
482	HSPBF70	793744	492	AR227:14, AR104:11, AR271:9, AR232:8, AR229:8, AR275:7, AR060:6, AK201:6, AK257:6, AK259:6, AR228:5, AR169:5, AR269:5, AR283:5, AR2828:5, AR285:4, AR169:5, AR293:5, AR283:5, AR252:5, AR206:3, AR178:4, AR254:4, AR185:4, AR308:3, AR300:3, AR089:3, AR291:3, AR170:3, AR257:3, AR272:3,
				AR236:3, AR215:3, AR233:3, AR311:3, AR282:3, AR175:3, AR224:3, AR243:2, AR295:2, AR171:2,
				AR234.2, AR296.2, AR213.2, AR261.2, AR216.2, AR316.2, AR294.2, AR286.2, AR172.2, AR230.2,
				AR268:2, AR096:2, AR312:2, AR313:2, AR277:2, AR217:1, AR288:1, AR222:1, AK258:1, AK238:1,
				AR189:1, AR033:1, AR168:1, AR173:1, AR260:1 H04/8:13, L0608:4, H0486:2, H0032:2, L0774:2, L0774:2, H0803:1, H0673:1, H0
				H0163:1, S0002:1, L0762:1, L0805:1, L0655:1, L0659:1, H0144:1, H0689:1, H0539:1, S0392:1, H0479:1 and
				80027:1.
483	HSQCM10	638591	493	AR261:16, AR296:15, AR309:15, AR161:14, AR163:14, AR162:14, AR291:12, AR295:10, AR177:10,
				AR264:9, AR28/:9, AR103:9, AR203:9, AR100:3, AR297:3, AR265:3, AR286:7, AR257:7, AR229:7,
				AR262.7. AR173.6. AR231.6, AR266.6, AR312.6, AR178.6, AR239.6, AR233.6, AR200.6, AR207.6,
				AR197.6, AR289.6, AR238.6, AR247.6, AR228.6, AR096.6, AR294.6, AR240.6, AR237.5, AR308.5,
				AR269.5, AR190.5, AR189.5, AR316.5, AR271.5, AR191.5, AR226:5, AR272.5, AR174:5, AR225:5,
				AR274:5, AR185:5, AR268:5, AR061:5, AR179:5, AR290:5, AR215:5, AR263:5, AR060:4, AR199:4,
				AR212:4, AR183:4, AR300:4, AR168:4, AR193:4, AR188:4, AR175:4, AR246:4, AR243:4, AR299:4,
				AR313:4, AR203:4, AR230:4, AR055:4, AR311:4, AR282:4, AR234:4, AR258:4, AR195:4, AR218:4,
				AR180.4, AR283.4, AR169.4, AR254.4, AR104.4, AR232.4, AR267.4, AR219.3, AR201.3, AR213.3,
				AR253:3, AR182:3, AR247:3, AR245:3, AR236:3, AR210:3, AR210:3, AR256:3, AR260:3, AR1/0:3,
				AR270:3, AR204:3, AR211:3, AR171:3, AR277:2, AR217:2, AR033:2, AR205:2, AR216:2, AR226:2,
				AR224:2 L0747:8, L0659:7, L0776:5, L0770:4, L0662:4, L0768:4, L0775:4, L0752:4, L0603:4, H0550:3,
			_	S0410:3, L0764:3, L0665:3, L0439:3, L0750:3, S0356:2, S0408:2, L0471:2, H0271:2, S0440:2, L0762:2,
				L0769:2, L0372:2, L0646:2, L0773:2, L0766:2, L0649:2, L0653:2, L0663:2, L0664:2, In0144:2, L0203:4,

				H0547:2, H0690:2, H0659:2, L0602:2, S0404:2, L0754:2, L0749:2, L0777:2, L0758:2, L0596:2, H0657:1, S0001:1, H0484:1, H0638:1, S0418:1, S0444:1, L0717:1, H0333:1, H0156:1, H0052:1, H0545:1, H0012:1, H0083:1, H0687:1, H0687:1, H0674:1, H0090:1, H0066:1, H0100:1, L0434:1, L0351:1, H0494:1, H0561:1, S0466:1, H0641:1, H0529:1, L0763:1, L0761:1, L0667:1, L0363:1, L0653:1, L0654:1, L0379:1, L0607:1, L0807:1, L0807:1, H0648:1, H0521:1, L0593:1, L0593:1, L0507:1, L0658:1, H0670:1, H0648:1, H0521:1, L0593:1, L0593:1, L0593:1, L0507:1, S0406:1, L0748:1, L0731:1, L0593:1, L0593:1, S0026:1, S0276:1 and H0422:1.
484	HSSAJ29	630636	494	AR196:8, AR201:10, AR269:9, AR176:9, AR204:8, AR161:8, AR198:8, AR192:8, AR162:8, AR163:8, AR196:8, AR201:10, AR269:9, AR165:7, AR242:7, AR164:7, AR243:6, AR207:6, AR228:6, AR309:6, AR196:6, AR295:6, AR180:7, AR165:7, AR193:6, AR193:6, AR293:6, AR295:6, AR1825:6, AR191:6, AR172:6, AR266:5, AR271:5, AR264:6, AR267:6, AR233:6, AR204:5, AR204:4, AR206:5, AR206:5, AR206:5, AR206:5, AR206:5, AR206:5, AR206:4, AR206:3, AR206:2, AR216:4, AR206:2, AR216:4, AR206:2, AR216:4, AR206:3, AR206:2, AR206:2, AR206:2, AR216:2,
485	HSSDX51	566879	495	AR219:2 L0717:5, S0049:3, H0135:3, L0439:3, L3905:2, L0665:2, L0599:2, S0222:1, H0391:1, H0069:1, L0021:1, H0575:1, T0082:1, H0052:1, H0050:1, S0334:1, S0338:1, S0312:1, T0006:1, S0038:1, H0652:1, L0774:1, L0775:1, L0554:1, L0653:1, L0438:1, L3824:1 and H0690:1.
486	HSSFT08	589978	496	AR196:17, AR176:9, AR313:9, AR162:7, AR161:7, AR199:7, AR163:6, AR228:6, AR267:6, AR266:6, AR055:6, AR165:6, AR180:6, AR053:6, AR164:6, AR225:5, AR166:5, AR264:5, AR269:5, AR268:5, AR238:5, AR180:6, AR180:6, AR270:5, AR242:5, AR183:5, AR193:5, AR193:5, AR182:4, AR178:4, AR290:4, AR292:4, AR312:4, AR237:4, AR239:4, AR231:4, AR290:4, AR292:4, AR177:4, AR293:4, AR237:4, AR235:4, AR231:4, AR292:4, AR177:4, AR190:3, AR188:3, AR316:3, AR261:4, AR237:4, AR191:4, AR226:3, AR292:4, AR175:4, AR190:3, AR188:3, AR271:3, AR293:3, AR293:3, AR293:3, AR293:3, AR293:3, AR293:3, AR293:3, AR293:3, AR292:3, AR292:3, AR292:3, AR292:3, AR292:3, AR292:3, AR292:3, AR292:3, AR292:2, AR292:3, AR292:2, AR292:2, AR292:2, AR292:2, AR292:2, AR292:2, AR292:1, AR292:1, AR292:1, AR292:1, AR292:1, AR292:1, AR292:1, AR292:1, AR223:1,

AR195:1, AR256:1, AR258:1, AR311:1, AR260:1 H0135:2, L0518:1 and L0758:1.	AR225:17, AR223:16, AR215:16, AR214:14, AR223:13, AR170:13, AR2171:10, AR183:9, AR268:9, AR165:8, AR225:17, AR223:16, AR221:1, AR226:11, AR269:11, AR169:11, AR171:10, AR183:9, AR268:9, AR165:8, AR271:12, AR266:11, AR266:11, AR269:11, AR169:11, AR217:10, AR249:7, AR249:11, AR269:11, AR269:11, AR169:8, AR271:6, AR271:6, AR271:6, AR273:6,	AR238:16, AR227:11, AR239:10, AR228:9, AR061:9, AK232:8, AK310:8, AK253:6, AR204:6, AR289:7, AR162:7, AR263:7, AR163:7, AR163:7, AR268:7, AR288:6, AR265:7, AR265:7, AR234:6, AR298:6, AR266:7, AR215:7, AR180:7, AR291:6, AR298:6, AR266:6, AR288:6, AR269:6, AR268:6, AR268:6, AR268:6, AR284:6,	
	497	839	498
	1352343	845666	1306937
		HSSGD52	HSSJC35
	78 7		488

				AR225:6, AR297:5, AR313:5, AR311:5, AR171:5, AR290:5, AR176:5, AR181:5, AR053:5, AR309:5,
				MR227.3, MR233.3, MR103:4, MR234:4, MR308:4, MR262:4, MR260:4, MR237:4, MR231:4, MR236:4, MR236:4, MR293:4, MR267:4, AR216:4, AR216:4, AR261:4, AR287:4, AR173:4, MR287:4, MR2
				AR164:4, AR230:4, AR312:4, AR175:4, AR295:4, AR166:4, AR217:3, AR236:3, AR210:3, AR296:3,
				AR060:3, AR273:3, AR231:3, AR196:3, AR300:3, AR052:3, AR277:3, AR184:3, AR200:3, AR033:3,
				AR172:3, AR299:3, AR259:3, AR223:3, AR096:3, AR179:3, AR191:3, AR177:3, AR256:3, AR240:3,
				AR316:3, AR190:3, AR245:3, AR203:3, AR186:3, AR254:3, AR055:2, AR178:2, AR247:2, AR272:2,
				AR246:2, AR174:2, AR213:2, AR280:2, AR188:2, AR248:2, AR189:2, AR260:2, AR207:2, AR222:2,
				AR274:2, AR253:2, AR224:2, AR089:2, AR283:2, AR275:2, AR039:2, AR104:2, AR235:2, AR185:1,
				AR221:1, AR205:1, AR211:1, AR199:1, AR243:1, AR219:1, AR214:1, AR218:1, AR195:1, AR281:1,
				[AR204:1 L0803:9, L0794:6, H0617:5, H0722:3, L0759:3, H0135:2, H0087:2, L0774:2, S0406:2, H0543:2,
				50444:1, H0550:1, H0559:1, H0486:1, H0581:1, H0046:1, H0083:1, T0041:1, T0042:1, S0438:1, H0529:1,
				L0761:1, L0643:1, L0766:1, L0657:1, L0659:1, L0791:1, L2257:1, H0520:1, S0378:1, L0611:1, L0749:1, H0445:1 and H0506:1.
	HSSJC35	745409	840	
	HSSJC35	716424	841	
489	HSTB186	753250	499	AR169:5, AR225:4, AR245:3, AR282:3, AR263:3, AR242:2, AR205:2, AR221:2, AR217:2, AR277:2,
				AR195:1, AR162:1, AR168:1, AR299:1, AR190:1, AR313:1, AR161:1, AR224:1, AR176:1, AR210:1,
				AR163:1, AR261:1 H0068:1
490	HSUBW09	413246	200	AR186:66, AR202:60, AR259:59, AR206:59, AR292:58, AR061:56, AR052:56, AR283:51, AR227:49,
				AR251:49, AR244:48, AR249:47, AR281:45, AR310:44, AR280:44, AR033:43, AR055:42, AR194:42,
		_		AR192:41, AR241:41, AR273:40, AR300:40, AR314:38, AR185:38, AR248:38, AR315:37, AR104:36,
				AR232:36, AR299:35, AR233:34, AR229:34, AR237:34, AR275:34, AR184:33, AR060:32, AR265:31,
				AR039:31, AR177:29, AR198:28, AR053:28, AR294:28, AR282:27, AR243:26, AR256:26, AR309:25,
				AR313:25, AR231:25, AR246:25, AR295:25, AR298:24, AR089:24, AR219:24, AR096:24, AR274:24,
				AR312:23, AR204:23, AR293:22, AR284:22, AR267:21, AR205:21, AR316:21, AR271:21, AR247:20,
				AR226:20, AR238:19, AR213:19, AR175:19, AR234:18, AR218:17, AR253:16, AR289:16, AR277:14,
				AR258:14, AR179:13, AR266:12, AR286:12, AR263:12, AR285:12, AR296:12, AR183:11, AR291:11,
				AR270:10, AR240:9, AR182:9, AR268:8, AR269:8, AR290:8, AR163:5, AR287:4, AR176:3, AR250:3,
				AR215:3, AR225:2, AR201:2, AR172:2, AR224:2, AR221:2, AR272:2, AR264:2, AR214:1, AR165:1,
				AR195:1, AR193:1, AR257:1, AR216:1 L0766:5, L0749:3, S0134:2, L0770:2, L0794:2, L0809:2, L0790:2,
				H0556:1, H0735:1, L0622:1, H0457:1, H0561:1, L0662:1, L0804:1, L5622:1, H0436:1, L0779:1, L0731:1,
				L0758:1, H0136:1 and H0506:1.
491	HSVAM10	520328	501	[AR313:45, AR242:40, AR192:36, AR173:31, AR196:28, AR204:26, AR258:26, AR300:25, AR039:25,

				AR240:25, AR247:24, AR096:24, AR175:23, AR089:23, AR229:22, AR218:22, AR262:22, AR165:21, AR185:21, AR166:21, AR174:20, AR27:20, AR179:20, AR162:20, AR164:20, AR163:20, AR161:19,
				AR234:19, AR178:19, AR199:19, AR293:18, AR269:18, AR236:18, AR299:17, AR183:17, AR233:17, AR236:13, AR236:13, AR236:13, AR236:13, AR226:13,
				AR182:15, AR268:14, AR189:14, AR243:14, AR203:14, AR238:13, AR316:13, AR176:13, AR264:13,
				AR296:13, AR231:12, AR200:12, AR312:12, AR287:12, AR285:12, AR255:11, AR294:11, AR237:11,
				AR060:11, AR260:11, AR261:11, AR219:11, AR188:11, AR297:11, AR230:11, AR205:10, AR274:10,
				AR235:10, AR286:10, AR197:10, AR290:9, AR207:9, AR267:9, AR266:9, AR291:9, AR201:9, AR288:9,
				AR295;9, AR271;9, AR282;9, AR239;9, AR193;8, AR226;8, AR035;8, AR104;8, AR271;7, AR190;7,
	•			AR212: 1, AR221: 1, AR203: 1, AR303: 1, AR313: 1, AR310: 3, AR311: 3, AR38: 3, AR383:
				AR253:2, AR254:2, AR250:1, AR222:1, AR171:1
492	HSVBU91	898965	502	AR215:6, AR207:5, AR162:4, AR161:4, AR163:4, AR309:4, AR271:4, AR266:4, AR165:4, AR176:4,
				AR164:4, AR272:3, AR039:3, AR192:3, AR213:3, AR253:3, AR166:3, AR264:3, AR089:3, AR282:3,
				AR204:3, AR235:3, AR205:3, AR313:3, AR053:3, AR201:2, AR224:2, AR178:2, AR275:2, AR181:2,
				AR267:2, AR182:2, AR269:2, AR277:2, AR104:2, AR286:2, AR246:2, AR287:2, AR289:2, AR033:2,
				AR243:2, AR237:2, AR230:2, AR223:2, AR268:2, AR293:2, AR180:2, AR060:2, AR175:2, AR198:2,
				AR229:2, AR177:2, AR270:2, AR233:2, AR183:2, AR228:2, AR261:2, AR239:2, AR316:2, AR285:2,
				AR179:2, AR232:1, AR231:1, AR312:1, AR061:1, AR288:1, AR257:1, AR096:1, AR291:1, AR225:1,
				AR226:1, AR294:1, AR295:1, AR185:1, AR311:1, AR227:1, AR234:1, AR174:1, AR203:1, AR297:1,
				AR173:1, AR191:1, AR247:1, AR308:1, AR238:1, AR216:1, AR255:1, AR170:1 H0309:1
493	HSXCG83	944388	503	AR184:28, AR252:11, AR162:11, AR161:10, AR219:10, AR163:10, AR218:9, AR165:9, AR296:9, AR164:9,
				AR255:9, AR166:9, AR261:9, AR291:8, AR235:8, AR250:8, AR269:8, AR188:8, AR287:8, AR264:8,
				AR260:8, AR268:8, AR290:8, AR253:7, AR180:7, AR176:7, AR285:7, AR257:7, AR270:7, AR182:7,
				AR186:7, AR190:7, AR236:7, AR196:7, AR173:7, AR297:7, AR295:7, AR288:7, AR266:7, AR191:7,
				AR263:7, AR055:6, AR060:6, AR200:6, AR215:6, AR316:6, AR399:6, AR183:6, AR181:6, AK224:6,
				AR273:6, AR275:6, AR052:6, AR284:6, AR221:6, AR096:6, AR262:6, AR311:6, AR17:6, AR194:0,
				AR216:6, AR217:6, AR089:5, AR308:5, AR210:5, AR192:5, AR179:5, AR293:5, AR239:5, AR177:5,
				AR189:5, AR254:5, AR185:5, AR272:5, AR053:5, AR294:5, AR240:5, AR267:5, AR313:4, AR211:4,
				JAR282:4, AR171:4, AR212:4, AR238:4, AR231:4, AR289:4, AR312:4, AR174:4, AR178:4, AR228:4,
				JAR258:4, AR204:4, AR225:4, AR213:4, AR310:4, AR039:4, AR286:4, AR203:4, AR265:4, AR247:4,
				AR205:4, AR229:4, AR271:4, AR274:4, AR233:4, AR198:4, AR214:4, AR199:4, AR061:4, AR299:3,
				AR168:3, AR169:3, AR234:3, AR298:3, AR251:3, AR248:3, AR300:3, AR193:3, AR222:3, AR292:3,
				AK243:3, AK237:3, AK033:3, AK277:3, AK104:3, AK240:3, AK220:3, AK207:3, AK203:3,

				AR201:3, AR202:3, AR256:2, AR230:2, AR244:2, AR223:2, AR195:2, AR195:2, AR227:1, AR259:1,
				AK1/2:1, AK280:1, AK314:1, AK1/0:1, AK313:1 LU///:3, 30420:2, 304/0:2, H0010:2, LU/83:2, LZ/00:2, S0378:2, L0748:2, L0752:2, L0758:2, H0624:1, H0556:1, S0358:1, H0196:1, T0110:1, H0050:1, H0266:1,
				H0288:1, L0483:1, H0673:1, S0036:1, H0413:1, L0769:1, L0764:1, L0803:1, L0774:1, L0659:1, L0663:1, L0665:1, L2263:1, H0648:1, S0206:1, L0740:1, L0747:1, L0750:1 and H0423:1.
	HSXCG83	830673	842	
494	HSXEC75	634032	504	AR089:8, AR253:8, AR176:8, AR060:7, AR055:7, AR161:6, AR162:6, AR163:6, AR245:6, AR177:6,
	11			AR309:5, AR269:5, AR271:5, AR165:5, AR239:5, AR226:5, AR180:5, AR164:5, AR181:5, AR250:5,
				AR207:3, AR174:3, AR233:3, AR224:3, AR240:3, AR100:3, AR200:3, AR1223:3, AR104:3, AR102:4, AR189:4 AR183:4 AR238:4, AR233:4, AR283:4, AR237:4, AR313:4, AR193:4, AR275:4, AR270:4.
				AR243:4, AR053:4, AR268:4, AR272:4, AR228:4, AR300:4, AR185:4, AR282:3, AR201:3, AR267:3,
				AR316:3, AR191:3, AR178:3, AR190:3, AR232:3, AR240:3, AR264:3, AR179:3, AR205:3, AR096:3,
				AR311:3, AR291:3, AR231:3, AR235:3, AR033:3, AR198:3, AR197:3, AR227:3, AR261:3, AR061:3,
-				AR175:3, AR312:3, AR236:3, AR214:2, AR215:2, AR215:2, AR234:2, AR289:2, AR204:2, AR217:2,
				AR247:2, AR225:2, AR277:2, AR039:2, AR222:2, AR203:2, AR188:2, AR199:2, AR196:2, AR288:2,
				JAR218:2, AR286:2, AR274:2, AR308:2, AR290:2, AR212:2, AR262:2, AR293:2, AR171:2, AR295:2,
				AR223:2, AR296:2, AR230:1, AR260:1, AR172:1, AR255:1, AR195:1, AR213:1, AR200:1, AR173:1
				H0032:3, L0438:3, L0758:3, S0376:2, L0439:2, S0418:1, S0410:1, H0574:1, H0156:1, H0036:1, S0010:1,
				S0474:1, H0581:1, T0110:1, S0214:1, S0036:1, H0591:1, H0038:1, H0634:1, H0494:1, L0796:1, L0372:1,
				L0803:1, L0804:1, L0666:1, L0664:1, L0565:1, H0539:1, S0378:1, L0749:1, L0779:1, L0731:1 and S0260:1.
495	HSXEQ06	1016924	505	AR169:5, AR274:4, AR266:4, AR039:4, AR213:3, AR264:3, AR207:3, AR198:3, AR254:3, AR205:3,
				AR235:3, AR225:3, AR165:3, AR309:3, AR269:3, AR291:3, AR166:3, AR181:2, AR255:2, AR308:2,
				AR104:2, AR243:2, AR180:2, AR312:2, AR177:2, AR224:2, AR271:2, AR270:2, AR295:2, AR267:2,
				AR268:2, AR175:2, AR297:2, AR212:2, AR285:2, AR289:2, AR089:2, AR223:2, AR287:2, AR214:2,
				AR161:2, AR179:2, AR203:2, AR170:2, AR299:2, AR2 <i>47:</i> 2, AR163:2, AR263:2, AR313:2, AR293:2,
				AR168:1, AR222:1, AR195:1, AR164:1, AR290:1, AR033:1, AR283:1, AR294:1, AR239:1, AR174:1,
				AR172:1, AR316:1, AR162:1, AR300:1, AR190:1, AR252:1, AR096:1, AR193:1, AR286:1, AR217:1,
				AR275:1, AR191:1, AR231:1, AR200:1, AR228:1, AR277:1, AR257:1, AR215:1, AR288:1, AR060:1,
				AR226:1, AR196:1 L0438:8, L0439:7, L0740:7, L0777:6, L0754:5, L0776:4, L0756:4, H0423:4, H0013:3,
				L0766:3, L0745:3, H0624:2, H0657:2, H0590:2, S0010:2, H0457:2, L0471:2, H0090:2, H0623:2, S0426:2,
				L0803:2, L0655:2, L0659:2, L0792:2, H0659:2, L0749:2, L0599:2, H0170:1, H0171:1, H0717:1, H0341:1,
	·			80001:1, 80418:1, 80442:1, 80045:1, 80222:1, H0586:1, H0587:1, H0632:1, H0486:1, H0635:1, H0427:1,
	=			H0098:1, H0036:1, H0050:1, T0003:1, S0003:1, L0055:1, S0036:1, H0038:1, H0625:1, H0633:1, L0375:1,
				[L0805:1, L0519:1, L0666:1, H0520:1, H0658:1, S0330:1, H0539:1, H0696:1, S0404:1, S0406:1, H0436:1,

				S0027:1, L0743:1, L0744:1, L0748:1, L0746:1, L0779:1, L0755:1, L0731:1, H0444:1, S0434:1, S0242:1 and
				H0543:1.
	HSXEQ06	889664	843	
	HSXEQ06	895602	844	100013 100013 100003
. 496	HSYAV50	847358	909	AR268:5, AR182:5, AR270:4, AR183:4, AR267:4, AR290:4, AR269:4, AR247:5, AR291:5, AR269:5, AR268:5, AR268:3, AR268:3, AR368:3, AR312:2, AR332:2, AR177:2, AR292:2,
				AR238-7, AR294-2, AR266:2, AR298:2, AR053:2, AR229:2, AR227:2, AR286:2, AR313:2, AR285:2,
				AR231:2, AR061:2, AR202:2, AR179:1, AR240:1, AR033:1, AR310:1, AR277:1, AR186:1, AR213:1,
				AR293:1, AR274:1, AR226:1, AR315:1, AR052:1, AR309:1, AR233:1, AR295:1, AR299:1, AR089:1
				L0659:9, L0803:6, L0794:5, L0750:4, S0212:3, L0809:3, L0665:3, L0751:3, L0759:3, H0717:2, S0298:2,
				H0402;2, H0392;2, H0545;2, S0250;2, H0551;2, L0768;2, L0666;2, L2654;2, L0757;2, H066/;2, H01/0;1,
				H0713:1. S0420:1, S0444:1, H0637:1, H0592:1, L0021:1, H0575:1, H0251:1, H0544:1, H0041:1, H0014:1,
				H0292:1. H0553:1. L0143:1, H0628:1, H0124:1, H0616:1, T0067:1, H0509:1, L0637:1, L0800:1, L0662:1,
				L0774:1, L0653:1, L0654:1, L0807:1, L0657:1, L0647:1, L2261:1, H0682:1, H0658:1, H0648:1, H0555:1,
				S0028:1 L0747:1 and L0749:1.
101	HOVAVIEK	486437	507	AR269.4 AR261:4. AR235:3. AR245:3. AR225:3. AR271:3, AR264:3, AR263:3, AR243:3, AR309:2,
49/	00 4 4 1 5 1	6	<u>}</u>	AR2771.2. AR236:2. AR204:2, AR039:2, AR257:2, AR296:2, AR282:2, AR223:2, AR096:2, AR299:2,
				AR260:2, AR166:2, AR165:2, AR175:2, AR205:2, AR222:2, AR269:2, AR195:2, AR196:2, AR290:2,
				AR198-1 AR033:1, AR294:1, AR308:1, AR193:1, AR172:1, AR216:1, AR089:1, AR247:1, AR210:1,
				AR191:1, AR312:1, AR258:1, AR239:1, AR300:1, AR211:1, AR240:1, AR217:1, AR316:1, AR185:1
				H0036:1 and H0551:1.
907	HeVA750	1027673	80%	SR706:29 H0521:13 L0747:13 H0266:10, H0457:9, L0758:9, H0556:8, L0742:7, H0620:6, H0040:6,
4	OCTUTION OF	201		H0543:6. H0619:5. S0278:5, S0250:5, H0529:5, L0766:5, H0662:4, H0638:4, H0370:4, S0372:4, L0770:4,
				10659.4, S3014.4, L0748.4, L0756.4, L0591.4, H0423.4, H0265.3, H0341.3, H0663.3, S0442.3, S0222.3,
				H0545:3, H0012:3, H0024:3, H0644:3, H0551:3, H0623:3, L0475:3, S0142:3, L0771:3, L0662:3, L0794:3,
				[.0783;3, H0519;3, S0126;3, S0037;3, L0439;3, L0740;3, L0754;3, L0750;3, L0752;3, L0755;3, L0731;3,
				1.0588;3, H0422;3, S0424;3, S0114;2, S0420;2, H0741;2, S0045;2, S0476;2, H0587;2, H0574;2, H0635;2,
				H0575;2, S0346;2, H0581;2, H0046;2, L0163;2, H0031;2, S0364;2, H0135;2, H0038;2, H0056;2, T0042;2,
				H0494;2, S0438;2, S0150;2, H0647;2, L0763;2, L0764;2, L0803;2, L0809;2, H0539;2, H0522;2, L0741;2,
				L0749:2, H0445:2, S0194:2, S0276:2, S0458:2, T0002:1, H0159:1, S0342:1, H0294:1, S0134:1, S0218:1,
				H0650:1, H0656:1, L3814:1, S0116:1, S0212:1, H0402:1, S0418:1, S0356:1, S0358:1, H0730:1, H0208:1,
_				S0132:1, H0645:1, H0393:1, H0351:1, H0437:1, H0431:1, H0455:1, H0586:1, H0586:1, H0333:1, L3810:1,
				H0013:1, H0069:1, S0280:1, T0082:1, H0036:1, H0618:1, H0253:1, H0318:1, S0049:1, H0251:1, H0263:1,
				H0597:1, H0563:1, H0571:1, H0081:1, H0023:1, H0051:1, S0051:1, H0083:1, H0629:1, H0267:1, H00867:1,

499	HSYAZ50 HSYAZ50 HSYAZ63 HSYAZ63	852318 902235 882732 1177537	845 847 509	800031, H02321, H00391, T00231, H04241, H05331, H06281, H06661, H02121, S00361, H00331, H00531, H00331, H05611, L03711, L05611,
				H0014:1, S0388:1, H0083:1, H0375:1, H0271:1, H0188:1, S0003:1, H0615:1, H0039:1, L0194:1, T0023:1, H0598:1, H0135:1, T0067:1, H0269:1, S0112:1, H0128:1, H0560:1, H0359:1, S0150:1, S0472:1, H0649:1,
				S0144:1, S0142:1, L0625:1, L0762:1, L0761:1, L0771:1, L0773:1, L0381:1, L0774:1, L0378:1, L0659:1,

				L0542:1, L0782:1, L0809:1, S0052:1, S0053:1, H0144:1, S0126:1, H0689:1, S0332:1, H0696:1, H0134:1, S0037:1, S0027:1, L0755:1, L0757:1, S0031:1, H0445:1, S0436:1, L0593:1, S0026:1, H0543:1 and H0506:1.
	HSYAZ63	862063	848	
200	HSYBG37	1056317	510	AR216:52, AR214:45, AR205:44, AR215:39, AR199:38, AR274:34, AK222:35, AK217:33, AK223:25, AR216:25, AR172:31, AR171:30, AR168:30, AR223:29, AR245:28, AR169:28, AR224:27, AR170:27, AR210:25, AR2172:24, AR272:24, AR175:23, AR247:22, AR246:22, AR195:21, AR213:21, AR218:20, AR217:24, AR272:24, AR175:23, AR247:22, AR246:22, AR195:21, AR213:16, AR299:16, AR104:16, AR299:16, AR104:16, AR299:16, AR104:16, AR299:16, AR299:16, AR299:15, AR299:16, AR299:16, AR299:15, AR299:16, AR299:16, AR299:16, AR299:13, AR299:15, AR299:14, AR299:13, AR299:15, AR299:15, AR299:13, AR299:13, AR299:15, AR299:15, AR299:13, AR299:13, AR299:13, AR299:15, AR299:15, AR299:13, AR299:13, AR299:13, AR299:15, AR299:15, AR299:13, AR299:14, AR299:15, AR299:14, AR299
	HSYBG37	581098	846	78.201 00 AD180:00 AD107:87
501	HSZAF47	1352172	511	AR253:151, AR250:141, AR254:138, AR296:108, AR260:100, AR252:398, AK294:90, AK180:90, AK180:90, AK180:70, AR257:151, AR256:86, AR266:85, AR293:82, AR297:81, AR204:81, AR198:80, AR176:78, AR286:78, AR207:87, AR242:76, AR245:75, AR243:74, AR235:73, AR210:73, AR289:72, AR297:72, AR192:71, AR033:70, AR200:70, AR203:68, AR285:68, AR287:66, AR211:66, AR178:66, AR288:65, AR237:63, AR200:62, AR053:62, AR195:61, AR212:60, AR212:60, AR175:56, AR201:55, AR1313:55, AR199:54, AR179:53, AR203:57, AR229:57, AR275:56, AR309:55, AR177:55, AR191:51, AR203:67, AR203:50, AR203:57, AR203:47,

				AR167-78 AR775-27 AR163-27 AR096-27 AR089-26 AR168-26 AR313-26 AR165-25 AR263-24
				AR164:24, AR308:23, AR166:23, AR223:22, AR277:21, AR217:21, AR221:20, AR224:20, AR216:19,
				AR222:18, AR215:15, AR214:14 H0013:1, H0321:1, L0792:1 and L0779:1.
	HSZAF47	456551	820	
203	HT3SF53	884170	512	AR200:259, AR198:223, AR222:202, AR195:200, AR197:191, AR271:172, AR207:164, AR235:160, AR252:151, AR172:149, AR171:147, AR214:146, AR216:140, AR196:137, AR224:130, AR210:128,
				AR169:124, AR217:124, AR245:120, AR261:117, AR274:111, AR211:111, AR168:110, AR293:106,
				AR309:105, AR227:101, AR215:101, AR291:101, AR260:99, AR263:99, AR258:99, AR205:98, AR247:98,
				AR188:97, AR295:96, AR219:95, AR264:93, AR221:93, AR255:92, AR223:92, AR204:91, AR170:91,
				AR311:90, AR290:90, AR297:89, AR166:89, AR218:88, AR285:88, AR253:88, AR189:88, AR250:87,
				AR308:87, AR254:87, AR173:87, AR257:86, AR243:85, AR193:85, AR242:84, AR312:82, AR287:82,
				AR053:78, AR228:78, AR175:77, AR225:76, AR269:75, AR288:74, AR201:73, AR296:72, AR203:71,
				AR256:71, AR294:70, AR192:69, AR246:68, AR226:68, AR212:67, AR272:67, AR199:67, AR182:66,
				AR213:66, AR270:66, AR176:66, AR262:65, AR267:65, AR231:65, AR163:65, AR161:65, AR289:65,
			~~~~	AR162:64, AR268:64, AR236:64, AR190:64, AR286:63, AR238:62, AR316:59, AR191:58, AR313:58,
				AR275:58, AR180:58, AR239:57, AR165:56, AR237:56, AR164:54, AR178:52, AR096:52, AR240:51,
				AR183:51, AR282:47, AR033:46, AR230:45, AR039:45, AR233:44, AR229:44, AR181:44, AR089:42,
				AR299:42, AR179:41, AR300:39, AR266:38, AR060:37, AR232:36, AR234:35, AR174:32, AR283:32,
				AR177:29, AR277:29, AR185:27, AR061:26, AR104:23, AR055:19 H0622:11, H0251:8, L0439:6, S0360:5,
				H0040:5, S0126:5, L0596:5, H0556:4, S0356:4, S0408:4, S0410:4, S0476:4, H0013:4, H0494:4, H0521:4,
	•			L0754:4, S0116:3, S0045:3, H0575:3, H0052:3, H0024:3, H0591:3, H0551:3, H0529:3, L0774:3, L0776:3,
				L0659:3, H0144:3, H0658:3, L0748:3, H0717:2, S0418:2, H0392:2, H0331:2, H0632:2, H0590:2, H0046:2,
				H0123:2, L0471:2, H0373:2, H0510:2, L0483:2, H0553:2, H0628:2, H0056:2, H0561:2, H0646:2, L0761:2,
				L0663:2, S0148:2, L0438:2, H0547:2, H0648:2, S0027:2, L0740:2, L0747:2, L0749:2, L0756:2, L0731:2,
				L0758:2, L0593:2, L0362:2, S0026:2, S0194:2, H0506:2, H0265:1, H0222:1, L3643:1, H0344:1, S0114:1,
				H0589:1, H0638:1, S0420:1, S0444:1, H0733:1, S0468:1, H0619:1, H0261:1, H0550:1, H0587:1, H0574:1,
				[H0486:1, H0427:1, H0156:1, H0706:1, H0253:1, S0010:1, H0309:1, H0596:1, H0544:1, H0457:1, N0006:1,
				H0569:1, H0566:1, H0050:1, H0014:1, H0051:1, H0083:1, H0179:1, S0250:1, S0003:1, H0328:1, H0428:1,
				H0039:1, T0006:1, H0030:1, H0031:1, L0055:1, H0032:1, H0169:1, H0674:1, L0455:1, H0090:1, H0616:1,
				H0264:1, H0433:1, H0412:1, H0413:1, H0623:1, S0386:1, H0100:1, L0351:1, L0475:1, H0714:1, S0440:1,
				H0509:1, H0641:1, S0210:1, S0422:1, L0770:1, L0638:1, L0800:1, L0521:1, L0662:1, L0794:1, L0784:1,
				L0806:1, L0606:1, L0657:1, L0518:1, L0545:1, L0547:1, L0787:1, L0532:1, L0664:1, L0665:1, S0374:1,
				H0723:1, H0724:1, H0520:1, H0519:1, H0690:1, H0435:1, H0670:1, S0330:1, H0539:1, H0518:1, H0696:1,
				S0044:1, S0406:1, S3014:1, S0028:1, L0751:1, L0752:1, S0031:1, S0260:1, H0445:1, S0456:1, L0591:1,

				1.0592:1, L0599:1, L0595:1, H0667:1, H0542:1 and S0424:1.
503	HTSG157	1299921	513	AR213:5, AR264:4, AR224:4, AR254:4, AR207:4, AR053:3, AR197:3, AR101:5, AR102:3, AR103:3, AR103:3, AR250:3, AR221:3, AR171:3, AR311:3, AR212:3, AR105:3, AR217:2, AR309:2, AR263:2, AR193:2, AR203:2, AR195:2, AR196:2, AR166:2, AR089:2, AR164:2, AR312:2, AR308:2, AR223:2, AR183:2, AR267:2, AR169:2, AR198:2, AR266:2, AR033:2, AR216:2, AR216:1, AR240:1, AR240:1, AR286:1, AR277:1, AR060:1, AR180:1, AR204:1, AR240:1, AR205:1, AR2
	HTSGJ57	740767	851	7,700 A 2,700 A 2,000
504	HTADX17	753289		AR227:8, AR293:7, AR176:7, AR233:7, AR229:7, AR232:6, AR179:6, AR185:6, AR257:9, AR299:0, AR299:7, AR299:7, AR299:7, AR295:4, AR296:6, AR060:5, AR089:3, AR085:5, AR287:5, AR287:3, AR286:4, AR286:4, AR289:3, AR289:3, AR289:3, AR280:4, AR291:3, AR290:3, AR271:4, AR221:3, AR289:3, AR287:2, AR290:3, AR273:3, AR096:3, AR273:2, AR283:2, AR162:2, AR283:2, AR181:2, AR061:2, AR262:2, AR269:2, AR177:2, AR261:2, AR269:2, AR283:2, AR161:2, AR261:2, AR283:2, AR177:2, AR261:2, AR291:3, AR293:2, AR293:2, AR293:2, AR293:2, AR293:2, AR293:2, AR293:2, AR293:2, AR293:1, AR2
	HTADX17	457172	852	STORY A PRIORITY AND TRAINING AND TRAINING
505	HTDAF28	396835	515	AR214:19, AR263:19, AR223:19, AR224:17, AR222:17, AR207:16, AK311:16, AK170:15, AK106:15, AR166:15, AR264:14, AR165:14, AR215:14, AR216:13, AR216:13, AR216:13, AR216:13, AR216:13, AR216:13, AR208:13, AR216:13, AR216:13, AR216:13, AR208:10, AR208:13, AR208:13, AR208:10, AR208:9, AR208:9, AR208:8, AR208:8, AR208:8, AR208:9, AR208:10, AR208:7,

252:5, AR232:5, 233:4, AR243:4, :2, L0666:2, L0754:2, i, L0790:1, H0520:1,	11:14, AR192:14, 4:13, AR165:13, 55:11, AR197:11, 14:10, AR096:10, 10:10, AR172:10, R204:9, AR221:9, 196:8, AR285:8, 174:7, AR274:7, 287:6, AR247:6, 183:5, AR238:5, 230:5, AR238:5, 230:5, AR238:4, 0758:5, L0768:4,	316:54, AR185:54, 09:26, AR240:26, 13:19, AR252:19, 93:16, AR165:15, 05:14, AR246:14, 16:10, AR169:10, AR171:8, AR215:8, 126:5, AR199:5, 178:4, AR226:4, 1296:3, AR239:3, 1200:2, AR189:2, 13:1 and L0698:1.
AR182:5, AR267:5, AR256:5, AR219:5, AR260:5, AR254:5, AR211:5, AR274:5, AR252:5, AR232:5, AR271:5, AR271:5, AR275:5, AR033:5, AR190:5, AR055:4, AR229:4, AR227:4, AR228:4, AR233:4, AR243:4, AR226:4, AR185:3, AR250:2 H0551:4, L0665:3, S0356:2, S0360:2, L0662:2, L0527:2, L0666:2, L0754:2, H0333:1, H0012:1, H0688:1, H0553:1, H0477:1, L0770:1, L0769:1, L069:1, L0606:1, L0790:1, H0520:1, H0682:1, L0777:1, L0779:1 and L0755:1.	AR207:26, AR195:26, AR263:17, AR283:16, AR245:15, AR277:15, AR213:14, AR311:14, AR192:14, AR282:14, AR212:14, AR308:13, AR246:13, AR193:13, AR089:13, AR309:13, AR264:13, AR165:13, AR282:14, AR212:14, AR308:13, AR246:13, AR165:13, AR264:13, AR166:12, AR262:12, AR162:12, AR161:12, AR163:12, AR055:11, AR197:11, AR170:11, AR295:10, AR222:11, AR216:11, AR225:11, AR217:11, AR261:11, AR261:11, AR217:10, AR273:10, AR262:10, AR218:0, AR261:11, AR261:11, AR261:10, AR261:10, AR262:10, AR261:10, AR262:10, AR262:10, AR262:10, AR261:10, AR262:10, AR261:10, AR261:10, AR262:10, AR261:10, AR261:1	AR095:101, AR060:80, AR299:73, AR283:71, AR089:66, AR104:65, AR039:55, AR316:54, AR185:54, AR096:52, AR277:47, AR282:47, AR219:41, AR218:33, AR313:29, AR207:26, AR309:26, AR240:26, AR300:24, AR263:22, AR195:21, AR219:41, AR218:13, AR311:20, AR264:20, AR213:19, AR242:17, AR242:17, AR242:17, AR242:16, AR192:16, AR241:16, AR192:16, AR241:16, AR192:16, AR193:16, AR193:16, AR192:16, AR197:15, AR164:15, AR242:17, AR242:17, AR242:17, AR242:17, AR242:17, AR246:14, AR197:15, AR166:14, AR198:13, AR271:13, AR271:14, AR271:14, AR271:10, AR171:10, AR170:9, AR271:13, AR235:12, AR243:1, AR261:12, AR216:10, AR192:16, AR271:13, AR229:7, AR243:7, AR196:6, AR216:16, AR061:6, AR230:6, AR285:4, AR233:4, AR283:4, AR233:4, AR283:4, AR283:4, AR283:4, AR283:3, AR283:3, AR262:3, AR283:3, AR262:3, AR262:3, AR283:3, AR283:3, AR283:3, AR283:3, AR283:3, AR283:2, AR28
19:5, AR260:5, AR254:5 90:5, AR055:4, AR229:4 i51:4, L0665:3, S0356:2, 3:1, H0477:1, L0770:1, L	AR207:26, AR195:26, AR263:17, AR283:16, AR245:15, ARAR282:14, AR212:14, AR308:13, AR246:13, AR193:13, AR2822:14, AR212:14, AR308:13, AR246:13, AR193:13, AR222:13, AR162:12, AR AR205:13, AR164:12, AR166:12, AR242:12, AR162:12, AR AR170:11, AR198:11, AR222:11, AR316:11, AR225:11, AR AR233:10, AR293:10, AR216:10, AR104:10, AR316:11, AR216:9, AR298:9, AR296:9, AR196:9, AR298:9, AR272:9, AR185:8, AR283:8, AR286:8, AR243:7, AR297:7, AR181:7, AR295:7, AR300:7, AR211:6, AR217:6, AR297:7, AR191:5, AR196:5, AR293:5, AR293:5, AR199:5, AR173:5, AR262:5, AR283:5, AR283:5, AR283:5, AR283:5, AR283:5, AR283:4, AR260:4, AR269:4, AR270:4, AR256:3, H0616:14, H0038:1H0411:2, L0779:2, H0747:1, L0151:1, L0697:1 and S0398:1.	AR0955.101, AR060:80, AR299:73, AR283:71, AR089:66, AR104:65, AR039:55, AR316:54, AR185: AR096:52, AR277:47, AR282:47, AR219:41, AR218:33, AR313:29, AR207:26, AR309:26, AR240:2 AR300:24, AR263:22, AR195:21, AR212:21, AR308:21, AR311:20, AR264:20, AR263:19, AR252:14, AR262:17, AR242:17, AR245:16, AR214:16, AR192:16, AR224:16, AR223:16, AR193:16, AR195:13, AR197:15, AR166:14, AR198:13, AR211:13, AR235:12, AR243:14, AR163:14, AR205:14, AR246:14, AR197:15, AR166:14, AR198:13, AR271:13, AR235:12, AR253:12, AR201:12, AR216:10, AR169:14, AR272:10, AR277:10, AR177:9, AR277:13, AR295:1, AR295:1, AR296:1, AR296:2, AR296:2, AR296:2, AR296:2, AR296:3, AR296:3, AR296:3, AR296:3, AR296:3, AR296:2, AR296:1, L0794:3, L0794:3, L0768:1, L0791:1, L4501:1, L0758:1 and L0698:1
AR182:5, AR267:5, AR256:5, AR219:5, AR260:5, AR271:5, AR275:5, AR033:5, AR190:5, AR055:4, AR226:4, AR185:3, AR250:2 H0551:4, L0665:3, 5H0333:1, H0012:1, H0688:1, H0553:1, H0477:1, L747:1, L0747:1, H0682:1, L0747:1, L0775:1, and L0755:1.	AR195:26, AR263:17, P AR212:14, AR308:13, P AR164:12, AR166:12, A AR198:11, AR222:11, P AR295:10, AR223:10, A AR252:9, AR039:9, AR AR171:9, AR313:9, AR2 AR253:8, AR286:8, AR2 AR300:7, AR211:6, AR2 AR300:7, AR293:5, AR2 AR199:5, AR293:5, AR2 AR290:4, AR270:4, AR2 AR290:4, AR267:3, AR2 AR290:4, AR267:3, AR2 AR290:4, AR267:3, AR2	I, AR060:80, AR299:73, AR277:47, AR282:47, AR263:22, AR195:21, AR242:11, AR242:15, AR164:15, AR222:15, AR217:10, AR170:9, AAR227:6, AR247:6, AR235:7, AR191:3, AR291:3, AR281:3, AR2823:3, AR232:3, AR232:3, AR232:3, AR232:3, AR232:3, AR232:3, AR235:2, AR237:2, AR2825:1, L0794:3, H00
AR182:5, A AR271:5, A AR226:4, A H0333:1, H	AR207:26, AR282:14, AR170:11, AR033:10, AR201:10, AR177:9, AR185:8, AR235:7, AR180:5, AR237:5, AR237:5, AR238:4, AR238:4,	AR055:10 AR096:52, AR300:24, AR053:17, AR197:15, AR272:10, AR230:6, AR221:5, AR257:3, AR190:1.
	516	517
	866485	462221
	HTEAF65	HTEB128
	506	507

		т-	· · · · · · · · · · · · · · · · · · ·		Т	Т	Т	1
AR219:12, AR283:22, AR104:20, AR277:19, AR055:18, AR060:16, AR096:15, AR316:15, AR039:13, AR219:13, AR218:11, AR299:11, AR185:11, AR313:10, AR282:9, AR170:7, AR300:7, AR240:7, AR214:3, AR197:3, AR212:2, AR263:2, AR215:2, AR223:2, AR168:2, AR256:1, AR254:2, AR161:2, AR163:2, AR163:2, AR162:2, AR171:2, AR275:2, AR322:1, AR312:1, AR257:1, AR258:1, AR196:1, AR230:1, AR213:1, AR182:1, H0046:1, L0753:2, L0022:1, H00518:1, H0053:1, H0038:1, L0804:1 and L0779:1, AR213:1, AR182:1, AR182:3, AR164:2, AR257:1, AR258:1, AR257:1, AR182:1, AR1	AR245:5, AR311:4, AR282:3, AR253:3, AR089:3, AR176:3, AK27/2:2, AK104:2, AK104:2, AK104:2, AK105:2, AR295:1, AR299:2, AR168:2, AR271:2, AR166:2, AR193:1, AR297:1, AR296:1, AR216:1, AR172:1, AR24:1, AR033:1, AR163:1, AR296:1, AR178:1, AR161:1, AR283:1, AR174:1, AR181:1 L0758:2 and H0038:1.	5 AP318-5 AP318-5 AP300-5 AP318-5 AP310-5	AR240:15, AR055:12, AR060:7, AR039:6, AR229:6, AR219:9, AR210:1, AR057:1, AR055:12, AR060:1, AR282:4, AR282:4, AR316:4, AR096:3, AR313:3 H0486:3, H0253:1, H0544:1, H0012:1, S0388:1, H0553:1, H0090:1, H0038:1, H0652:1, L0769:1, L0641:1, L0806:1, H0696:1, L0748:1, L0749:1, S0031:1 and S0196:1.	AR165:8, AR164:8, AR166:7, AR202:7, AR202:9, AR193:9, AR203:9, AR203:9, AR203:9, AR203:9, AR203:9, AR203:9, AR203:4, AR203:3, AR208:3, AR102:3, AR208:3, AR208:3, AR208:3, AR208:3, AR208:3, AR208:3, AR208:3, AR209:3, AR209:2, AR200:2, AR200:1, AR200:1, AR200:1, AR200:1, AR200:1, H0050:1, H00				
518	519	853	520	521	854	855	856	857
587326	1352193	519372	543396	908143	904624	850770	847564	830165
HTEDF80	HTEDY42	HTEDY42	HTEFU65	HTEG142	HTEGI42	HTEGI42	HTEGI42	HTEGI42
208	509		510	511				

512	HTEHR24	835894	522	AR161:5, AR162:5, AR163:5, AR176:5, AR180:4, AR060:3, AR055:3, AR269:3, AR300:3, AR181:3, AR228:3, AR170:3, AR166:3, AR233:3, AR257:3, AR168:3, AR177:3, AR165:3, AR255:3, AR264:3, AR216:3, AR172:3, AR236:2, AR201:2, AR288:2, AR271:2, AR209:2, AR206:2, AR206:2, AR309:2, AR179:2, AR247:2, AR234:2, AR236:2, AR309:2, AR179:2, AR247:2, AR234:2, AR236:2, AR206:2, AR309:2, AR182:2, AR089:2, AR270:2, AR236:2, AR207:2, AR207:2, AR207:2, AR207:2, AR207:2,
				AR223:2, AR287:2, AR275:2, AR297:2, AR293:2, AR174:2, AR264:2, AR294:2, AR203:2, AR193:2, AR185:2, AR235:2, AR190:2, AR231:2, AR175:2, AR196:2, AR198:2, AR196:2, AR196:2, AR295:2, AR196:2, AR295:2, AR295:2, AR316:2, AR3
				AR267:2, AR189:1, AR191:1, AR312:1, AR277:1, AR283:1, AR226:1, AR214:1, AR205:1, AR299:1, AR250:1, AR230:1, AR308:1, AR096:1, AR183:1, AR289:1, AR217:1, AR204:1, AR313:1,
				AR173:1, AR246:1, AR272:1, AR232:1 L0766:8, L0803:6, L0758:5, H0038:4, L0805:3, H0144:3, L0743:3, H0550:2, H0013:2, H0457:2, L0471:2, H0616:2, L0800:2, L0794:2, L0774:2, L0776:2, H0710:2, H0521:2,
				L0754.2, L0745.2, H0341.1, H0728.1, H0735.1, H0392.1, H0069.1, H0635.1, H0318.1, H0581.1, H0309.1,
				H0012:1, H0083:1, H0179:1, H0039:1, S0036:1, H0090:1, S0440:1, L070:1, L070:1, L070:1, L0372:1, L0606:1, L0806:1, L0807:1, L0659:1, L5622:1, L0788:1, L0791:1, L0793:1, L0666:1, S0428:1, S0126:1, S0027:1,
				S0028:1, L0740:1, L0756:1, L0752:1, L0731:1, L0588:1, L0591:1, S0026:1, S0242:1, H0423:1 and H0293:1.
	HTEHR24	513039	828	C) FIRST COURT BY COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE COURT OF THE
513	HTEHU31	600394	523	AR052:91, AR249:84, AR251:80, AR186:76, AR259:66, AR055:65, AR248:65, AK218:63, AK314:62,
				[AKU35;61, AKL84;39, AKU61;37, AKL19;36, AK310;33, AK163;33, AKL26;33, AKL75;33, AK161;34, AK164;34, AK164;34,
				ARAZZ. 33, ARIOT. 33, ARZZO. 33, ARZZO. 31, ARZZO. 30, ARZZO. 31, ARZZO. 32,
				AR282:38, AR267:38, AR256:38, AR300:37, AR039:37, AR269:37, AR183:36, AR229:36, AR309:35,
				AR274:34, AR289:34, AR271:32, AR227:32, AR182:32, AR299:32, AR316:30, AR281:30, AR237:29,
				AR241:29, AR293:28, AR268:27, AR243:27, AR179:26, AR283:26, AR177:26, AR206:26, AR226:26,
				AR291:25, AR294:25, AR053:24, AR060:24, AR232:24, AR240:22, AR231:21, AR194:21, AR198:20,
				AK234:20, AK238:20, AK244:20, AK277:19, AK192:16, AK204:16, AK263:16, AK203:17, AK223:17, AK2245:37, AR275:16, AR275:16, AR2045:34, AR205:14, AR205:14, AR205:14, AR246:12, AR178:5, AR207:5, AR170:4, AR245:3,
				AR297:3, AR224:2, AR239:2, AR201:2, AR225:2, AR272:2, AR168:2, AR252:2, AR221:2, AR162:2,
				AR176:1, AR172:1, AR163:1, AR164:1, AR214:1, AR161:1, AR288:1, AR212:1, AR188:1, AR181:1,
				[AR222:1, AR171:1, AR287:1, AR308:1, AR193:1, AR311:1, AR196:1 L0748:9, L0659:3, S0358:2, H0618:2,
				H0616:2, H0529:2, L07/0:2, L0662:2, L07/9:2, L07/0:2, L07
				LO758:2, H0171:1, S0114:1, S0218:1, S0116:1, S0359:1, H0575:1, H0504:1, H0512:1, H0626:1, H06
				\$0344:1, L0769:1, L0761:1, L0771:1, L0768:1, L0649:1, L0803:1, L0833:1, L0847:1, L0888:1, L0883:1, L0883:1, L0888:1, L08
				L0438.1, 50292.1, H00/0.1, L0/30.1, L0/7/1.1, L0/60.1, L0003.1 and L0001.1.

				AR277:3, AR216:3, AR195:2, AR170:2, AR270:2, AR183:2, AR274:2, AR175:2, AR288:2, AR239:2, AR182:2, AR182:2, AR264:2, AR297:2, AR236:2, AR164:2, AR296:2, AR291:2, AR199:2, AR194:2, AR311:2, AR053:2, AR272:2, AR211:2, AR311:2, AR053:2, AR272:2, AR211:2, AR311:2, AR3
				AR183.2, AR223.2, AR213.2, AR236.1, AR230.1, AR260.1, AR260.1, AR263.1, AR262.1, AR193.1, AR263.1, AR2
				L0758:4, L0770:2, L0754:2, L0779:2, L3643:1, H0327:1, H0038:1, L0769:1, L0764:1, L0794:1, H0658:1, L0748:1, L0777:1, L0780:1, L0731:1 and L0465:1.
	HTEJN13	658744	860	
	HTEJN13	381941	861	
518	HTELM16	834058	528	AR263:52, AR207:41, AR169:38, AR309:37, AR214:36, AR235:36, AR264:35, AR224:34, AR223:32,
	<del></del>			ARI <i>12:</i> 31, AR <i>222:31,</i> AR283:31, AR2 <i>17:30,</i> AR311:30, AR213:29, AR106:29, AR153:27, AR170:20, AR171:36, AR317:36, AR316:36, AR382:35, AR308:25, AR197:25, AR089:24, AR165:24, AR316:23,
				AR252:23. AR215:23. AR217:23. AR192:23. AR225:23. AR164:23, AR166:22, AR198:22, AR271:21,
				AR055:21, AR162:21, AR053:20, AR104:20, AR240:20, AR177:20, AR312:20, AR201:19, AR299:19,
				AR161:19, AR221:19, AR096:19, AR236:19, AR272:19, AR245:19, AR163:19, AR261:18, AR242:18,
				AR313:17, AR205:17, AR193:17, AR196:17, AR060:16, AR219:16, AR246:16, AR033:16, AR218:16,
				AR181:16, AR039:16, AR229:16, AR300:15, AR176:15, AR174:15, AR275:15, AR185:14, AR288:14,
				AR274:14, AR250:13, AR238:13, AR295:13, AR253:12, AR237:12, AR243:12, AR232:11, AR239:11,
				AR247:11, AR289:11, AR183:11, AR291:10, AR234:10, AR188:10, AR226:10, AR175:10, AR231:10,
				AR285:10, AR204:10, AR293:10, AR227:10, AR173:10, AR200:10, AR199:10, AR296:10, AR211:10,
				AR061:10, AR178:10, AR268:10, AR266:10, AR180:10, AR255:10, AR258:9, AR233:9, AR262:9, AR286:9,
				AR191:9, AR230:9, AR257:9, AR267:9, AR297:9, AR254:9, AR189:9, AR210:9, AR269:9, AR270:8,
				AR260:8, AR228:8, AR287:8, AR256:8, AR190:8, AR182:7, AR294:7, AR179:7, AR203:7, AR290:6
			_	L0794:7, L0779:3, L0758:3, H0559:1, H0616:1 and L0767:1.
519	HTEPG70	834931	529	AR176:9, AR282:7, AR162:7, AR161:7, AR163:7, AR055:7, AR182:7, AR060:6, AR266:6, AR253:6,
				AR201:6, AR228:5, AR242:5, AR269:5, AR204:5, AR198:5, AR268:5, AR261:5, AR233:5, AR229:5,
				AR267:5, AR270:5, AR263:5, AR165:5, AR166:5, AR181:5, AR214:5, AR223:4, AR246:4, AR183:4,
				AR164:4, AR236:4, AR239:4, AR309:4, AR257:4, AR283:4, AR178:4, AR275:4, AR053:4, AR289:4,
				AR238:4, AR177:4, AR193:4, AR185:4, AR230:4, AR089:4, AR218:4, AR277:4, AR179:4, AR192:4,
				AR264:4, AR039:4, AR237:4, AR104:4, AR316:4, AR061:4, AR243:4, AR175:4, AR300:4, AR222:4,
	<u>-</u>		_	AR240:4, AR299:4, AR231:4, AR224:3, AR096:3, AR312:3, AR308:3, AR173:3, AR245:3, AR212:3,
				AR226:3, AR196:3, AR271:3, AR286:3, AR247:3, AR214:3, AR215:3, AR255:3, AR293:3, AR288:3,
				AR174:3, AR197:3, AR191:3, AR296:3, AR207:3, AR221:3, AR262:3, AR227:3, AR287:3, AR199:3,

AR190:3, AR290:3, AR180:3, AR234:3, AR311:2, AR303:2, AR203:2, AR200:2, AR272:2, AR294:2, AR294:2, AR216:2, AR188:2, AR295:2, AR288:2, AR285:2, AR189:2, AR297:2, AR171:2, AR205:2, AR195:2, AR219:2, AR210:2, AR218:1, AR256:1, AR172:1, AR235:1, AR2	HTGAU75 597467 530 AR312:17, AR311:14, AR309:11, AR308:9, AR313:8, AR170:8, ARZ20:0, ARZ20:0, AR162:7, AR161:7, AR163:7, AR165:7, AR165:7, AR165:6, AR264:6, AR264:6, AR201:6, AR201:5, AR192:5, AR201:5, AR192:5, AR201:5, AR192:5, AR201:5, AR201:5, AR201:5, AR201:5, AR201:5, AR201:5, AR201:5, AR201:5, AR201:6,	HTGEP89 410582 531 AR204:2819, AR055:1652, AR243:1634, AR193:1321, AR242:1210, AR198:1095, AR197:1075, AR283:1053, AR039:973, AR195:937, AR201:917, AR207:849, AR192:820, AR203:809, AR300:762, AR271:680, AR053:647, AR246:622, AR173:609, AR245:560, AR254:550, AR275:550, AR272:439, AR212:528, AR272:4408, AR212:477, AR282:470, AR256:462, AR089:9461, AR2772:459, AR272:439, AR212:534, AR266:324, AR247:346, AR247:346, AR272:347, AR216:343, AR080:347, AR229:367, AR228:347, AR228:347, AR228:347, AR228:347, AR228:347, AR228:347, AR240:319, AR164:315, AR166:312, AR285:327, AR161:301, AR061:296, AR309:280, AR177:322, AR286:201, AR287:136, AR286:205, AR176:321, AR288:197, AR287:196, AR285:277, AR294:277, AR296:120, AR286:107, AR288:197, AR287:196, AR286:205, AR176:201, AR286:107, AR288:197, AR287:196, AR286:108, AR199:146, AR268:140, AR286:140, AR286:140, AR286:101, AR289:95, AR266:394, AR188:197, AR286:140, AR286:101, AR289:95, AR266:94, AR296:84, AR188:87, AR296:134, AR199:146, AR296:84, AR188:87, AR296:31, AR296:34, AR199:163, AR218:37, AR296:34, AR181:63, AR296:34, AR181:63, AR296:34, AR181:63, AR296:34, AR199:146, AR286:44, AR183:82, AR296:34, AR199:163, AR218:73, AR296:34, AR198:163, AR296:34, AR198:47, AR296:34, AR296:34, AR296:34, AR198:47, AR296:34,
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

				L0758:2 S0218:1. S0001:1. H0305:1. L3435:1. L3815:1. L0766:1 and H0422:1.
522	HTHBG43	116616	532	AR215:6, AR225:5, AR171:3, AR170:3, AR193:3, AR180:3, AR254:3, AR169:3, AR221:2, AR243:2, AR309:2, AR164:2, AR283:2, AR222:2, AR172:2, AR176:1, AR224:1, AR299:1, AR290:1, AR311:1, AR242:1, AR270:1, AR216:1, AR168:1, AR296:1, AR277:1 L0485:2, H0306:1, H0063:1, L0646:1, L0794:1, L0766:1 and H0134:1.
	HTHBG43	906282	862	
523	HTHCA18	908144	533	AR313:12, AR161:10, AR162:10, AR163:10, AR165:8, AR166:8, AR229:7, AR089:7, AR176:7, AR196:7, AR197:6, AR039:6, AR198:6, AR169:6, AR300:6, AR228:5, AR180:5, AR289:5, AR220:5, AR269:5, AR269:5, AR269:5, AR269:5, AR269:5, AR269:5, AR269:5, AR260:5, AR267:5, AR181:5, AR096:5, AR173:5, AR060:5, AR275:4, AR277:4, AR183:4, AR277:4, AR189:4, AR277:4, AR177:4, AR242:4, AR191:4, AR197:4, AR185:4, AR277:4, AR189:4, AR277:4, AR277:4, AR266:4, AR266:4, AR266:4, AR266:4, AR277:4, AR268:4, AR2726:4, AR267:3, AR268:3, AR268:2,
	HTHCA18	906536	863	
524	HTHDJ94	693652	534	AR170:6, AR225:3, AR291:3, AR195:3, AR270:3, AR215:2, AR289:2, AR180:2, AR161:2, AR162:2, AR170:6, AR265:1, AR163:2, AR308:2, AR308:2, AR289:2, AR309:2, AR168:2, AR266:1, AR203:1, AR165:1, AR193:1, AR203:1, AR2

				L0779:2, L0758:2, H0542:2, S0114:1, H0341:1, H0483:1, S0442:1, L0586:1, H0013:1, S0280:1, H0012:1, H0687:1, H0413:1, H0623:1, S0150:1, S0002:1, L0637:1, L0372:1, L0800:1, L0643:1, L0644:1, L0645:1,
				L0774:1, L0809:1, L5623:1, L0666:1, L0664:1, L0664:1, R0052:1, H0519:1, H0690:1, S0328:1, S0378:1, H0521:1, H0522:1, S0190:1, H0436:1, S0037:1, S0027:1, L0750:1, S0436:1, L0601:1, L0366:1, S0424:1 and H0506:1.
	HTJML75	873355	864	
528	HTLBE23	902187	538	AR235:3, AR180:2, AR224:2, AR168:2, AR217:1, AR246:1, AR171:1, AR060:1, AR283:1, AR257:1, AR176:1, AR178:1, AR252:1, AR223:1, AR183:1 H0253:3, H0618:2, L0758:2 and H0038:1.
	HTLBE23	885431	865	
529	HTLFE42	460583	539	AR253:5, AR221:4, AR176:4, AR222:3, AR215:3, AR299:3, AR226:3, AR257:3, AR311:3, AR033:2, AR181:2, AR291:2, AR277:2, AR295:2, AR181:2, AR313:2, AR172:2, AR265:2, AR265:1,
	-			AR162:1, AR193:1, AR163:1, AR089:1, AR173:1, AR216:1, AR283:1, AR258:1, AR224:1, AR185:1
				L0794:25, H0038:4, L0758:3, L0768:2, H0253:1, H0050:1, L0789:1, L0790:1 and SU380:1.
530	HTLFE57	1352310	240	AR238:11, AR236:10, AR285:9, AR291:9, AR235:9, AR250:9, AR234:8, AR161:8, AR162:8, AR261:8,
				AR298:8, AR287:8, AR163:8, AR207:8, AR183:8, AR297:8, AR227:8, AR105:8, AR242:8, AR100:7,
				AR164:1, AR235:1, AR232:1, AR202:1, AR206: 1, AR113:1, AR121:1, AR220:1, AR243:6, AR241:6, AR241:6, AR241:6,
				AR231.6, AR197.6, AR033.6, AR061.6, AR255.6, AR211.6, AR270.6, AR174.6, AR190.6, AR228.6,
				AR284:6, AR176:5, AR290:5, AR289:5, AR295:5, AR237:5, AR212:5, AR272:5, AR182:5, AR296:5,
				AR053:5, AR184:5, AR257:5, AR181:5, AR188:5, AR266:5, AR178:5, AR268:5, AR249:5, AR177:5,
				AR247:4, AR195:4, AR192:4, AR052:4, AR175:4, AR217:4, AR215:4, AR260:4, AR213:4, AR286:4,
				AR230:4, AR294:4, AR196:4, AR170:4, AR311:4, AR267:4, AR243:4, AR312:4, AR200:4, AR310:4,
				AR224:4, AR210:4, AR089:4, AR240:4, AR253:4, AR186:4, AR252:4, AR198:4, AR309:3, AR263:3,
_				AR313:3, AR282:3, AR264:3, AR221:3, AR277:3, AR204:3, AR222:3, AR271:3, AR169:3, AR199:3,
_				AR172:3, AR308:3, AR275:3, AR193:3, AR216:3, AR205:3, AR179:3, AR248:3, AR246:3, AR259:3,
			,,,,,	AR299:3, AR225:3, AR218:3, AR219:3, AR060:3, AR168:3, AR316:3, AR258:2, AR055:2, AR214:2,
				AR256:2, AR273:2, AR203:2, AR096:2, AR185:2, AR300:2, AR104:2, AR265:2, AR223:2, AR202:2,
				AR283:2, AR171:2, AR274:1, AR039:1, AR244:1, AR206:1 L0758:11, H0617:9, L0747:8, H0618:5,
				H0253:4, S0049:4, H0494:4, L0742:4, L0751:4, H0305:3, H0580:3, L3388:3, H0052:3, L0157:3, L0763:3,
				1,0769:3, 1,0768:3, 1,0774:3, 1,0783:3, 1,0144:3, 5,0436:3, 1,0341:2, 5,0360:2, 1,0550:2, 1,0546:2, 1,0424:2,
				L0766:2, L0793:2, L0748:2, L0439:2, L0745:2, L0757:2, L0759:2, L0581:2, S0452:2, H0556:1, S0114:1,
				H0483:1, H0661:1, S0442:1, S0358:1, S0408:1, H0733:1, H0734:1, S0132:1, S0476:1, H0261:1, S6016:1,
				S0222:1, H0592:1, H0586:1, H0559:1, H0486:1, T0060:1, S0280:1, H0575:1, H0706:1, S0474:1, L0024:1,
				H0150:1, H0620:1, H0024:1, T0010:1, S6028:1, H0179:1, H0252:1, H0417:1, H0674:1, H0708:1, H0038:1,

H0059:1, T0042:1, H0745:1, H0509:1, H0641:1, S0144:1, L0770:1, L0637:1, L5565:1, L0363:1, L0794:1, L0775:1, L0383:1, L0528:1, H0520:1, H0593:1, H0684:1, S0380:1, H0521:1, H0522:1, H0696:1, S0406:1, H0436:1, L0740:1, L0754:1, L0750:1, L0777:1, L0755:1, L0755:1, L0588:1, H0543:1, L0698:1 and S0424:1.					3 AR171:7, AR176:6, AR060:5, AR053:9, AR103:3, AR102:3, AR181:4, AR180:4, AR214:4, AR233:4, AR269:4, AR266:4, AR277:3, AR277:3, AR277:3, AR277:3, AR267:3, AR275:3, AR261:3, AR273:3, AR261:3, AR265:3, AR266:3, A
	998	867	541	542	543
	791409	608317	1035130	838460	833906
	HTLFES7		HTLGE31	HTLHY14	HTLTT32
			531	532	533

				AR089:3, AR262:3, AR242:3, AR218:3, AR185:3, AR216:3, AR104:3, AR20:3, AR201:3, AR175:3, AR111:3, AR238:3, AR188:3, AR231:3, AR295:2, AR260:2, AR172:2, AR230:2, AR282:2, AR308:2,
				AR174:2, AR274:2, AR316:2, AR198:2, AR239:2, AR283:2, AR294:2, AR096:2, AR286:2, AR193:2,
				AR285:2, AR293:2, AR207:2, AR234:2, AR297:2, AR200:2, AR287:2, AR226:2, AR196:2, AR309:2,
				AR190:2, AR227:2, AR203:2, AR296:2, AR217:2, AR033:2, AR168:2, AR312:2, AR247:2, AR195:2,
				AR189:1, AR224:1, AR222:1, AR199:1, AR258:1, AR219:1, AR039:1, AR232:1, AR313:1, AR256:1,
				AR221:1 L0758:5, L0779:4, H0618:3, H0038:1, L0768:1 and L0794:1.
534	HTT.IV19	1046341	544	AR313:57, AR039:49, AR089:39, AR299:34, AR277:31, AR185:28, AR096:28, AR300:28, AR240:27,
				AR316:25, AR218:23, AR104:23, AR060:21, AR219:20, AR055:17, AR282:17, AR283:12 H0618:1
535	HTNB091	519313	545	<u>AR235:13, AR261:11, AR277:8, AR291:8, AR236:7, AR266:7, AR295:7, AR296:6, AR176:6, AR255:6,</u>
)			!	AR285;6. AR288;5, AR293;5, AR294;5, AR262;5, AR214:5, AR162;5, AR163:5, AR257:5, AR237:5,
				AR228:5, AR161:5, AR297:5, AR225:5, AR269:5, AR182:5, AR287:5, AR178:5, AR231:5, AR309:5,
				AR181:5, AR289:5, AR270:5, AR233:4, AR177:4, AR239:4, AR223:4, AR229:4, AR197:4, AR290:4,
				AR286:4, AR196:4, AR272:4, AR175:4, AR238:4, AR274:4, AR183:4, AR267:4, AR226:4, AR253:4,
		·		AR260:4, AR221:4, AR169:4, AR165:4, AR168:4, AR191:4, AR164:4, AR174:4, AR190:3, AR180:3,
		_		AR268:3, AR179:3, AR166:3, AR188:3, AR275:3, AR199:3, AR264:3, AR258:3, AR227:3, AR230:3,
				AR312:3. AR232:3. AR234:3. AR193:3, AR200:3, AR263:3, AR308:3, AR217:3, AR061:3, AR189:3,
				AR173:3. AR256:3. AR313:2, AR198:2, AR311:2, AR282:2, AR300:2, AR212:2, AR247:2, AR203:2,
				AR21112, AR207:2, AR210:2, AR316:2, AR240:2, AR201:2, AR185:2, AR096:2, AR299:2, AR033:2,
				AR089:2, AR195:2, AR271:2, AR060:1, AR243:1, AR055:1, AR216:1, AR224:1, AR172:1, AR039:1,
				AR104:1, AR219:1 L0809:4, L0754:4, H0733:3, L0794:3, L0803:3, S0360:2, H0599:2, H0039:2, T0067:2,
				S0438:2, S0440:2, L0649:2, L0784:2, L0438:2, L0779:2, L0777:2, L0731:2, H0422:2, H0624:1, H0685:1,
				S0212:1, S0420:1, H0735:1, H0734:1, H0331:1, H0574:1, H0632:1, H0427:1, S0010:1, L0471:1, H0024:1,
				S0003:1, L0055:1, H0032:1, H0124:1, S0210:1, H0743:1, H0529:1, L0763:1, L0770:1, L3905:1, L0764:1,
				L0662:1, L0768:1, L0774:1, L0805:1, L5623:1, L0791:1, H0547:1, H0684:1, H0670:1, H0672:1, S0330:1,
				80044:1, H0134:1, H0436:1, L0439:1, L0740:1, L0752:1, H0707:1, 80436:1, L0485:1, S0026:1, H0653:1,
				H0665:1 and H0667:1.
536	HTOAK16	560744	546	AR219:41, AR218:38, AR096:21, AR316:19, AR089:18, AR313:16, AR060:12, AR104:11, AR039:11,
				AR282:10, AR299:9, AR240:9, AR264:9, AR055:8, AR252:7, AR185:7, AR263:7, AR300:7, AR225:7,
				AR309:6, AR162:6, AR254:6, AR193:6, AR161:6, AR217:5, AR283:5, AR163:5, AR277:5, AR308:5,
				JR116:5, AR270:4, AR269:4, AR229:4, AR182:4, AR228:4, AR224:4, AR183:4, AR275:4, AR223:4,
				AR267:4, AR237:4, AR266:4, AR177:4, AR171:4, AR291:4, AR165:4, AR181:4, AR238:4, AR178:4,
				AR312:4, AR261:4, AR247:4, AR164:3, AR268:3, AR173:3, AR272:3, AR233:3, AR216:3, AR166:3,
				[AR231:3, AR297:3, AR290:3, AR293:3, AR175:3, AR196:3, AK226:3, AK236:3, AK249:3, AK249:3,

			Ì
AR221:3, AR230:3, AR296:3, AR290:3, AR289:3, AR214:3, AR214:3, AR215:3, AR239:3, AR311:3, AR189:3, AR236:3, AR285:3, AR288:3, AR174:3, AR195:3, AR262:2, AR311:3, AR189:3, AR287:2, AR191:2, AR288:3, AR188:2, AR172:2, AR201:2, AR2027:2, AR190:2, AR280:3, AR280:3, AR280:2, AR302:1, AR203:2, AR203:2, AR203:1, AR203:1, H059:1, H0599:1, H0599:1, H0504:1 and L0748:1, AR232:6, AR271:1, AR260:1, AR033:1, H0587:1, L3816:1, H0599:1, H0504:1, AR24:1, AR23:2, AR2	526021 547	548	539 HTOGR42 838160 549 AR282:8, AR176:4, AR253:3, AR212:3, AR211:3, AR253:3,

		a contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of		_			
AR221:2, AR224:2, AR168:2, AR161:2, AR171:2, AR223:2, AR205:2, AR181:2, AR089:2, AR309:2, AR165:2, AR033:2, AR164:1, AR178:1, AR264:1, AR172:1, AR240:1, AR195:1, AR272:1, AR225:1, AR252:1, AR2	Г				0	1	2 AR252:6, AR245:5, AR294:5, AR207:4, AR269:4, AR204:4, AR111:4, AR254:4, AR259:3, AR251:3, AR201:2, A
	898	550	551	698	870	871	552
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	╁	240	541	Τ			542

AR166:2, AR217:2, AR242:2, AR267:2, AR181:2, AR168:2, AR177:2, AR240:2, AR293:2, AR216:2, AR313:2, AR211:2, AR262:2, AR262:2, AR263:2, AR253:2, AR253:2, AR253:2, AR253:2, AR253:2, AR253:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:2, AR239:1, AR230:1, AR230:1, AR232:1, AR230:1, AR232:1, AR2	H0328:1, H0264:1, H0494:1, L0645:1, L0803:1, L0022:1, L066:6, AR164:6, AR313:6, AR180:6, AR192:8, AR161:7, AR162:7, AR163:7, AR089:7, AR165:6, AR166:6, AR164:6, AR271:3, AR271:3, AR272:3, AR243:5, AR242:5, AR207:5, AR096:5, AR246:5, AR033:3, AR233:3, AR271:3, AR277:3, AR277:3, AR277:3, AR282:3, AR266:4, AR060:4, AR039:4, AR309:4, AR282:3, AR217:3, AR277:3, AR269:3, AR269:3, AR239:3, AR229:3, AR212:3, AR175:3, AR176:3, AR277:3, AR277:3, AR283:3, AR291:3, AR291:3, AR296:3, AR291:3, AR296:3, AR291:3, AR296:3, AR296:2, AR297:2, AR296:2, AR297:2, AR296:2, AR297:2, AR296:2, AR297:2, AR298:2, AR29	AR197:1, AR219:1, AR254:1, AR257:1, AR210:1, AR255:1 H0264:3, S0134:2, H0318:2, H0217:1, L0518:1, L0749:2, H0556:1, H0663:1, H0402:1, H0587:1, H0013:1, H0234:1, H0252:1, H0616:1, H0444:1, H0445:1 and L0596:1.	AR313:61, AR242:45, AR164:33, AR089:30, AR165:30, AR196:29, AR192:28, AR166:28, AR173:27, AR393:23, AR258:22, AR096:22, AR240:21, AR218:21, AR262:20, AR312:20, AR299:20, AR300:24, AR259:19, AR289:19, AR174:19, AR199:18, AR185:18, AR204:18, AR161:17, AR162:17, AR219:17, AR219:17, AR219:17, AR219:17, AR219:17, AR236:17, AR236:15, AR236:15, AR236:15, AR236:15, AR236:15, AR236:15, AR236:15, AR236:15, AR236:13, AR206:13, AR226:13, AR195:11, AR236:11, AR236:11, AR236:11, AR236:11, AR236:11, AR236:11, AR236:11, AR236:13, AR206:12, AR236:13, AR236:13, AR236:13, AR236:13, AR236:14, AR236:13, AR236:23, AR236:24, AR236:	AR226.1, AR256.5, AR309.5, AR104.5, AR311.4, AR210.4, AR289.4, AR274.4, AR232.4, AR223.4, AR211.5, AR211.5, AR216.5, AR309.5, AR309.5, AR311.4, AR216.3, AR168.3, AR061.2, AR171.2, AR217.2, AR217.2,
	553	872	554	
	826312	847904	797108	
	HTOIZ02	HTOIZ02	HTOIZ02 HTOJA73	
	543		544	

				AR172:2. AR224:2. AR212:2. AR215:1 H0264:1
545	нтолк60	545067	555	AR313:29, AR173:22, AR165:22, AR164:21, AR166:21, AR161:20, AR163:19, AR262:19, AR264:19, AR089:18, AR162:18, AR258:17, AR240:16, AR300:16, AR247:15, AR175:15, AR096:15, AR183:14, AR299:14, AR180:14, AR178:14, AR229:14, AR191:13, AR191:13, AR192:12, AR180:14, AR178:14, AR299:14, AR174:13, AR191:13, AR260:11, AR192:12, AR181:12, AR242:12, AR296:12, AR293:12, AR207:12, AR219:11, AR181:10, AR260:11, AR213:11, AR185:11, AR182:11, AR182:11, AR182:11, AR182:11, AR182:10, AR206:10, AR206:20, AR206:
				AR271:5, AR172:5, AR232:5, AR254:5, AR272:4, AR205:4, AR190:4, AR169:4, AR46:4, AR415:4, AR405:5, AR232:5, AR254:5, AR205:4, AR205:4, AR190:4, AR170:3, AR283:3, AR225:3, AR252:2 L0438:6, H0519:5, H0156:4, L0747:4, L0758:4, L0763:3, L0776:2, L0777:3, T0002:2, H0640:2, H0402:2, S0036:2, H0551:2, L0520:2, L0646:2, L0775:2, L0776:2, L0577:2, H0547:2, S0126:2, L0776:2, L0779:2, L0755:2, L0759:2, L0756:2, L0776:1, H0540:1, H0540:1, H0540:1, H0540:1, H0540:1, H0540:1, H0540:1, H0640:1, H0640
546	HTPBW <i>7</i> 9	1317835	556	AR055:85, AR060:59, AR039:42, AR104:41, AR299:38, AR089:38, AR283:31, AR096:31, AR183:24, AR316:27, AR282:27, AR219:20, AR218:19, AR300:19, AR240:19, AR277:18, AR215:15, AR225:15, AR316:27, AR214:11, AR216:10, AR18:10, AR166:10, AR269:9, AR216:19, AR313:14, AR214:11, AR217:11, AR221:7, AR270:7, AR176:7, AR224:6, AR061:6, AR267:6, AR178:8, AR266:8, AR177:6, AR272:6, AR272:6, AR277:6, AR173:6, AR175:6, AR290:6, AR299:5, AR177:5, AR291:5, AR191:5, AR272:6, AR243:5, AR181:5, AR297:5, AR191:5, AR297:5, AR299:5, AR289:5, AR289:5, AR289:4, AR297:4, AR297:4, AR299:4, AR297:4, AR297:3, AR190:4, AR297:4, AR297:4, AR297:3, AR190:4, AR297:4, AR297:3, AR199:3, AR297:3, AR199:3, AR297:3, AR199:3, AR297:3, AR196:3, AR296:3, AR196:3, AR296:3, AR296:3, AR297:3, AR296:3, AR29

AR256:2, AR235:2, AR274:2, AR264:2, AR053:2, AR213:1, AR169:1, AR250:1 L0747:7, H0618:6, H0253:5, H0135:4, S0046:3, H0620:3, S0344:3, L0809:3, H0556:2, S0354:2, S0358:2, S0378:2, H0370:2, H0039:2, H0038:2, H0038:2, L0438:2, L0438:2, L0438:2, H0670:2, S0152:2, H0632:2, H0046:2, T0010:2, H0048:2, H0188:2, H0039:2, S0144:2, L0438:2, L0438:1, H0640:1, H0645:2, L0581:2, S0276:2, H0713:1, H0656:1, H0176:1, H0638:1, S0418:1, S0356:1, S0360:1, S0360:1, S0360:1, S0360:1, H0041:1, H0009:1, H0550:1, H0123:1, H0037:1, H0024:1, H0518:1, S0474:1, H0050:1, H0124:1, H0087:1, H0059:1, H0059:1, H0104:1, H0124:1, H0087:1, H0087:1, H0059:1, H0100:1, H0494:1, S0142:1, S0426:1, H0448:1, L0769:1, L3905:1, L0373:1, L0373:1, L0804:1, L0774:1, L0659:1, H0478:1, L0528:1, L0743:1, L0748:1, L0752:1, S0434:1, L0503:1, H0422:1, S0424:1 and H0352:1.		AR223:5, AR228:5, AR223:5,	AR170:7, AR161:7, AR162:1, AR163:1, AR163:1, AR261:5, AR261:5, AR233:5, AR233:5, AR250:5, AR266:5, AR180:5, AR224:5, AR178:5, AR269:4, AR268:4, AR274:4, AR229:4, AR270:4, AR218:5, AR276:4, AR239:4, AR231:4, AR28:4, AR286:4, AR268:4, AR274:4, AR277:4, AR239:4, AR283:4, AR288:4, AR247:4, AR263:4, AR089:4, AR255:4, AR237:4, AR240:3, AR247:4, AR096:3, AR266:3, AR174:3, AR166:3, AR271:4, AR179:4, AR287:3, AR275:3, AR240:3, AR177:3, AR096:3, AR266:3, AR177:3, AR299:3, AR283:3, AR293:3, AR299:3, AR29	AR252:4, AR214:4, AR309:3, AR169:3, AR297:3, AR153:3, AR312:2, AR163:2, AR261:2, AR272:2, AR033:2, AR272:1, AR295:1, AR2	AR197:5, AR161:4, AR181:4, AR215:4, AR105:4, AR105:4, AR105:3, AR263:3, AR236:3, AR174:3, AR176:3, AR264:3, AR166:3, AR180:3, AR178:3, AR311:3, AR192:3, AR263:3, AR236:3, AR174:3,
<b>女田田田の田田田の</b>	873	$\neg$	557		559
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AR261:3, AR195:3, AR207:3, AR288:3, AR228:3, AR222:3, AR299:3, AR193:3, AR201:3, AR309:3,	AR308:2, AR213:2, AR213:2, AR214:2, AR109:2, AR109:2, AR177:2, AR196:2, AR216:2, AR308:2, AR225:2, AR226:2, AR26:2, AR	AR294:2, AR060:2, AR231:2, AR089:2, AR296:2, AR246:2, AR213:2, AR297:2, AR168:2, AR234:2, AR198:2, AR223:2, AR273:2, AR293:1, AR039:1, AR037:1, AR277:1, AR217:1, AR217:1,	AR240:1, AR203:1, AR290:1, AR316:1, AR061:1, AR286:1, AR300:1, AR242:1, AR230:1, AR200:1, AR240:1, AR243:1, AR310:1, AR033:1, AR086:1, AR258:1 S0408:4, H0036:3, S0444:2, S0360:1,	875	260	AR225:5, AR173:5, AR269:4, AR170:4, AR310:4, AR184:3, AR183:3, AR212:3, AR254:3, AR308:3,	AR224:3, AR200:2, AR265:2, AR251:2, AR264:2, AR270:2, AR315:2, AR192:2, AR295:2, AR175:2,	AR263:2, AR290:2, AR312:2, AR291:2, AR190:2, AR240:1, AR202:1, AR29:1, AR265:1, AR266:1, AR266:1, AR306:1, AR296:1, AR286:1, AR286:1, AR266:1, AR206:1	L0439:4, L2497:1, L0766:1, L0789:1 and L0758:1.	361 AR214:37, AR169:30, AR222:28, AR207:27, AR223:27, AR224:26, AR263:25, AR235:25, AR217:24,	ARI/1:22, AR106:22, AR1/2:22, AR1/0:21, AR210:21, AR22:22, RA211:17, RESOURCE AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17, AR108:17	AR295.16, AR308.16, AR163.16, AR053.16, AR245.16, AR089.15, AR221:15, AR261:15, AR264:15,	AR177:14, AR196:14, AR240:14, AR236:14, AR210:14, AR212:14, AR288:13, AR312:13, AR271:12,	AR197:12, AR282:12, AR277:12, AR316:12, AR252:12, AR211:11, AR033:11, AR181:11, AR246:11,	AR299:11, AR285:11, AR174:10, AR242:10, AR060:10, AR286:10, AR193:10, AR275:10, AR238:10,	AR229:10, AR313:10, AR201:10, AR055:9, AR291:9, AR188:9, AR232:9, AR218:9, AR480::9, AR 85:3;	AR296:9, AR289:9, AR300:9, AR104:9, AR239:9, AR274:9, AR199:8, AR253:8, AR296:8,	AR287:8, AR283:8, AR258:8, AR200:8, AR039:8, AR175:8, AR293:8, AK204:8, AK19:3,	AR247:7, AR234:7, AR176:7, AR254:7, AR173:7, AR173:7, AR256:1, AR188:1, AR136:1,	AR256:7, AR231:7, AR272:7, AR226:7, AR250:6, AR294:6, AK251:6, AK183:6, AK1/0:6,	AR255:6, AR203:6, AR268:6, AR269:6, AR290:6, AR260:6, AR180:6, AR243:5, AR178:5, AR233:5,	AK 1903, AK 0013, AK 1/7.3, AK 162.4, AK 220.4, AK 2013.4
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			AR299:4, AR096:4, AR316:4, AR218:3, AR089:3, AR039:3, AR219:2 L0766:3, H0486:2, L0803:2, L0756:2, H0341:1, H0484:1, H0255:1, H0747:1, H0327:1, H0012:1, H0266:1, S0344:1, L0770:1, L0638:1, L0639:1, H0341:1, H0484:1, H0258:1, H0747:1, H0377:1, H0573:1, H0577:1, H0577:1, Ind L0758:1, H0747:1, H0747:1, H0747:1, H0747:1, H0747:1, H0748:1,
			1.0662:1, 1.0806:1, 1.0805:1, 1.0093:1, 1.0093:1, 1.0052:1, 1.0052:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093:1, 1.0093
553 HTWKE60	634083	563	AR252:4, AR180:3, AR162:3, AR161:3, AR166:3, AR163:3, AR262:3, AR201:2, AR275:2, AR291:2, AR250:3, AR170:3, AR296:2, AR053:2, AR165:2, AR164:2, AR176:2, AR200:2, AR275:2, AR296:2,
			AR268:2, AR272:2, AR175:2, AR195:2, AR264:2, AR289:2, AR205:2, AR239:2, AR270:1, AR240:2,
			[AR295:2, AR313:1, AR173:1, AR269:1, AR290:1, AR250:1, AR191:1, AR191:1, AR108:1, AR1220:1; MAR260:1, AR108:1,
			AR189:1, AR238:1, AR182:1, AR117:1, AR275:1, AR175:1, AR275:1, L079:3, L0747:4, L0759:4, L059:4, L059:
			H0556:3, S0010:3, H0031:3, H0644:3, L0766:3, L0774:3, L0749:3, L0758:3, L0591:3, L0608:3, S0011:3,
			H0657;2, H0549;2, L3816;2, H0486;2, L0471;2, S0026;2, L0453;2, 110525;2, H0422;2, H0265;1, H0220;1,
		•	S0134:1, H0656:1, L2905:1, H0402:1, S0420:1, S0358:1, H0580:1, H0735:1, H0747:1, H0645:1, H0619:1,
<del></del>			H0393:1, L2814:1, H0437:1, S6022:1, H0431:1, H0586:1, L3817:1, H0643:1, H0130:1, 11030:1, 11030:1,
			H0052:1, H0263:1, H0596:1, T0110:1, H0024:1, H0014:1, H0404:1, S0003:1, H0596:1, L0363:1, H0052:1, H0053:1, H0053:1, H0059:1, H00
			H0628:1, H0032:1, H0398:1, H0391:1, 10038:1, 11023:1, 11023:1, 11083:1, L0809:1, L5622:1, L0791:1,
			10804:1, 20030:1, 2037:1, 22258:1, 80374:1, 13826:1, H0520:1, 80126:1, H0658:1, H0660:1, H0521:1,
			H055531, H057631, S003731, L074131, L075031, L075331, L073131, S003131, H044531, L068631, L0589331,
			1. H0136:1, S0194:1, L3378:1 and L3631:1.
SEA HTXCV12	1352213	564	AR282:6, AR162:4, AR161:4, AR163:4, AR053:4, AR176:4, AR264:3, AR217:3, AR214:3, AR230:3,
			AR168:3, AR182:3, AR172:3, AR266:3, AR274:3, AR269:3, AR270:3, AR225:3, AR105:3, AR215:3,
			AR235:3, AR178:3, AR164:3, AR257:3, AR309:3, AR166:3, AR228:3, AR207:3, AR210:3, AR208:3,
			AR221:2, AR175:2, AR294:2, AR210:2, AR240:2, AR1175:2, AR365:2, AR117:3, AR284:2, AR238:2.
	-		AR291:2, AR262:2, AR247:2, AR247:2, AR235:1, AR257:1, AR257:1, AR257:1, AR256:2
<del></del>			AR238:2, AR316:2, AR191:2, AR27:3, AR256:2, AR195:2, AR256:2, AR318:2, AR313:2, AR3174:2,
-			AR183:2, AR261:2, AR200:2, AR21:1, AR205:2, AR289:2, AR293:2, AR231:1, AR181:1,
			AK222:2, AK1 10:2, AK272:1, AK300:1, AK312:1, AK173:1, AR061:1, AK203:1, AK195:1, AK201:1,
			AR266:1, AR286:1, AR287:1, AR224:1 L0766:16, L0743:11, H0692:8, L0769:7, L0518:6, L0748:6,
			L0771:4, L0745;4, L0779;4, H0265:3, S0358:3, H0494:3, L0755:3, H0550:2, H0486:2, H0581:2, H0133:2,
			L0761:2, L0804:2, L0774:2, L0438:2, L0777:2, H0685:1, S0114:1, H0583:1, L3814:1, S0116:1, S0212:1, S02
			H0254:1, S0408:1, S0476:1, T0104:1, H0586:1, H0587:1, H0531:1, 10109:1, H0593:1, E0736:1, IXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
			H0012:1, H0264:1, S0438:1, L0770:1, L0374:1, L0704:1, L07

				L0792:1, L0663:1, S0428:1, S0053:1, S0216:1, H0783:1, L3811:1, S0152:1, H0522:1, H0555:1, S0432:1, L0744:1, L0751:1, L0749:1, L0756:1, L0758:1, S0436:1, L0601:1, H0543:1, H0423:1, S0424:1 and H0506:1.
	HTXCV12	567006	876	
555	HTXDW56	695765	\$65	AR215:23, AR248:19, AR216:19, AR217:16, AR244:15, AR186:14, AR170:14, AR197:14, AR052:14,
				AR240:12, AR161:11, AR162:11, AR238:11, AR163:11, AR214:11, AR225:11, AR164:11, AR249:11,
				AR246:11, AR060:11, AR165:11, AR196:11, AR221:11, AR296:11, AR089:11, AR316:10, AR310:10,
_				AR292:10, AR314:10, AR176:10, AR166:10, AR224:10, AR055:10, AR309:10, AR261:10, AR178:10,
				AR255:10, AR183:9, AR271:9, AR257:9, AR313:9, AR283:9, AR288:9, AR039:9, AR198:9, AR171:9,
				AR291:9, AR266:9, AR195:9, AR243:9, AR275:9, AR181:9, AR218:9, AR312:9, AR268:8, AR192:8,
				AR293:8, AR173:8, AR247:8, AR172:8, AR194:8, AR245:8, AR269:8, AR256:8, AR219:8, AR185:8,
				AR033:8, AR213:8, AR189:8, AR206:8, AR201:8, AR289:8, AR253:8, AR297:8, AR174:8, AR053:8,
				AR200:8, AR169:8, AR061:8, AR270:8, AR175:7, AR231:7, AR190:7, AR295:7, AR237:7, AR211:7,
				AR274:7, AR193:7, AR188:7, AR223:7, AR222:7, AR299:7, AR262:7, AR204:7, AR300:7, AR302:7,
				AR205:7, AR210:6, AR272:6, AR264:6, AR191:6, AR265:6, AR294:6, AR287:6, AR199:6, AR168:6,
				AR277:6, AR229:6, AR239:6, AR177:6, AR226:5, AR232:5, AR263:5, AR259:5, AR179:5, AR267:5,
				AR241:5, AR258:5, AR234:5, AR203:5, AR251:5, AR308:5, AR182:5, AR290:5, AR228:5, AR311:5,
				AR286:5, AR212:5, AR260:4, AR235:4, AR207:4, AR233:4, AR285:4, AR284:4, AR236:4, AR242:4,
				AR184:3, AR227:3, AR298:3, AR230:2, AR281:2, AR252:1 S0474:17, L0803:16, L0748:13, S0408:11,
				L2669:11, L2504:10, L0770:10, L0805:9, L0754:9, S0422:8, L0809:7, S0360:5, L0794:5, L0755:5, L0731:5,
				L0758:5, H0265:4, S0414:4, H0581:4, H0046:4, H0009:4, H0271:4, L0771:4, L0439:4, L0749:4, L0591:4,
				H0556:3, H0327:3, H0266:3, L0804:3, L0776:3, L0666:3, H0521:3, H0522:3, S0434:3, S0436:3, S0412:3,
				S0114:2, S0116:2, S0212:2, H0661:2, S0358:2, S0132:2, L3388:2, S0278:2, H0586:2, H0069:2, H0123:2,
				H0622:2, H0031:2, H0644:2, H0616:2, H0551:2, L0598:2, L0766:2, L0655:2, L0659:2, L0636:2, L0664:2,
				L0665:2, H0144:2, S0374:2, H0547:2, H0660:2, S0378:2, H0436:2, L0750:2, L0756:2, H0624:1, S0040:1,
				H0295:1, S0134:1, H0656:1, L2904:1, H0484:1, S0356:1, S0442:1, S0376:1, S0444:1, H0580:1, H0730:1,
	•			H0741:1, H0208:1, S0045:1, S0476:1, H0393:1, H0351:1, H0431:1, H0370:1, H0642:1, H0485:1, L3499:1,
		_		H0635:1, H0427:1, H0156:1, L0021:1, H0042:1, T0082:1, S0010:1, H0251:1, L0040:1, H0545:1, H0457:1,
				H0024:1, H0051:1, H0083:1, H0061:1, S0316:1, H0687:1, S0003:1, H0688:1, H0039:1, H0617:1, H0038:1,
				H0040:1, H0264:1, H0100:1, H0494:1, H0561:1, S0440:1, L2270:1, S0002:1, S0426:1, H0529:1, L0763:1,
				L0638:1, L0637:1, L0761:1, L0373:1, L0800:1, L0764:1, L0662:1, L0626:1, L0650:1, L0806:1, L0653:1,
				L0661:1, L0515:1, L5622:1, L0789:1, L0663:1, L2653:1, L2257:1, L2259:1, L2261:1, L2654:1, L0565:1,
				H0519:1, H0435:1, H0658:1, S0328:1, S0330:1, S0380:1, H0710:1, H0696:1, S0044:1, S0027:1, L0742:1,
				L0/44:1, L0/51:1, L0/43:1, L0/4/:1, L0/80:1, L0/32:1, L0/37:1, L0/

				50002 1 COLDO. 1 LIDSA2.1 LIDSA2.1 SONA2.1 and SO462.1
			Т	SUCZOLI, SULZELI, INDESTITE A DESTITE
556	HTXFL30	620001	200	AR271:4, AR1/1:4, AR245:2, AR161:2, AR178:2, AR168:2, AR165:2, AR246:2, AR291:2, AR192:2, AR162:2, AR163:2, AR163:2, AR26:4, AR26:4, AR163:2, AR163:2, AR26:4,
				AR193:1, AR257:1, AR295:1, AR263:1, AR216:1, AR272:1, AR293:1, AR173:1, AR270:1, AR230:1, AR230:1, AR300:1, AR300:1, AR300:1, H0265:1, H0565:1, H056:1, S0134:1, S0222:1,
				AK512:1, AK223.1, AK173:1, Tax 12:31.1. 1.0455:1, L0792:1, S0152:1, S0028:1 and L0591:1.
557	HTXKP61	824083	267	AR308:26, AR250:23, AR312:22, AR254:21, AR104:21, AR271:20, AR243:20, AR311:17, AR253:17,
				AR264:16, AR053:14, AR309:13, AR101:13, AR102:13, AR245:11, AR089:11, AR185:11, AR197:11,
				AR212.12, AR213.12, AR339.10, AR198.10, AR213.9, AR242.9, AR274.9, AR313.9, AR217.9, AR176.9,
				AR263:8. AR096:8, AR171:8, AR033:7, AR247:7, AR240:7, AR270:7, AR204:7, AR192:7, AR316:7,
				AR207:6, AR195:6, AR060:6, AR282:6, AR193:6, AR177:5, AR269:5, AR181:5, AR172:5, AR175:5,
				AR238:5, AR169:5, AR210:5, AR180:5, AR201:5, AR252:5, AR299:5, AR300:5, ARU61:5, AK221:4,
				AR055:4, AR223:4, AR268:4, AR174:4, AR218:4, AR178:4, AR222:4, AR182:4, AR2263:3,
				AR266:3, AR170:3, AR229:3, AR277:3, AR234:3, AR225:3, AR219:3, AR179:3, AR224:3, AR200:3,
				AR291:3, AR290:3, AR231:3, AR267:3, AR286:2, AR239:2, AR261:2, AR233:2, AR257:2, AR288:2,
				AR188:2, AR255:2, AR215:2, AR289:2, AR216:2, AR196:2, AR253:2, AR253:2, ARZ63:2, ARZ
				AR297:2, AR191:2, AR288:2, AR293:2, AR287:2, AR295:2, AR294:2, AR889:3, AR889:3, AR889:3, AR889:3, AR294:3, AR2
				AR260:2, AR256:1, AR262:1, AR296:1, AR203:1
				L0662:4, L0776:4, H0547:4, H0422:4, H0556:3, H0620:3, H0617:3, L0809:3, L0748:3, L07717:3, L0752:3,
				L0758:3, H0419:2, L0717:2, H0586:2, H0581:2, T0010:2, H0688:2, H0087:2, L0800:2, L0803:2, L0603:2, L0758:3, L07
				L0512;2, L0789;2, L0663;2, L0665;2, L0741;2, L0747;2, L0750;2, L0731;2, L0757;2, L0759;2, H0653;1,
				H0717:1, T0049:1, H0657:1, S0418:1, S0358:1, S0444:1, S0360:1, S0465:1, S0426:1, H0411:1, S0222:1,
				H0441:1, H0497:1, H0486:1, H0098:1, H0253:1, L0163:1, H0033:1, H0606:1, H06/3:1, L0433:1, L033:1, L033
				H0038:1, H0063:1, H0379:1, H0264:1, H0413:1, S0210:1, L0763:1, L0638:1, L0374:1, L0376:1, L0376:1, L0576:1, L05
				L0650:1, L0774:1, L0657:1, L0659:1, L0791:1, L0793:1, L0666:1, H0690:1, H0690:1, H0650:1, H0600:1, H06
				L0612:1, S0027:1, S0028:1, S0032:1, L0742:1, L0756:1, L0779:1, L0592:1, L0608:1, L0501:1, L0601:1, L06
				H0653:1, H0543:1, H0423:1 and L0600:1.
558	HUDBZ89	1352211	\$68	AR215:7, AR225:5, AR214:5, AR243:4, AR196:4, AR263:4, AR309:3, AR275:3, AR212:3, AR311:3,
				AR163:3, AR264:3, AR162:3, AR161:3, AR2/1:3, AR2/4:3, AR264:3, AR165:3, AR167:3, AR1
				AR253:3, AR207:3, AR205:3, AR312:3, AR296:3, AR236:3, AR274:3, AR170:3, AR1
				AR183:2, AR297:2, AR299:2, AR255:2, AR270:2, AR223:2, AR308:2, AR293:2, AR295:2, AR295:2,
				AR089:2, AR039:2, AR235:2, AR254:2, AR191:2, AR104:2, AR257:2, AR201:2, AR103:2, AR1
				AR286.2, AR201.2, AR282.2, AR165.2, AR300.2, AR170.2, AR050.2, AR177.2, AR310.2, AR300.2, AR170.2, AR300.2, AR3

				AR316:2, AR060:2, AR189:2, AR266:2, AR269:2, AR168:2, AR289:2, AR210:2, AR213:2, AR290:2,
				AR258:1, AR237:1, AR211:1, AR226:1, AR178:1, AR238:1, AR200:1, AR033:1, AR242:1, AR173:1,
				AR188:1, AR218:1, AR219:1 L0748:4, H0441:2, H0333:2, H0670:2, L0439:2, L0747:2, L0601:2, S0218:1, L0762:1, H0754:1 H0754:1 H0777:1 H0070:1 H0040:1, L0809:1, L0790:1, L0792:1,
				H0689:1, H0435:1, H0660:1, H0134:1, L0741:1, L0759:1 and S0042:1.
	HUDBZ89	562791	877	
559	HUFBY15	1352349	695	AR310:36, AR309:31, AR312:30, AR052:28, AR265:24, AR213:15, AR273:14, AR249:13, AK263:12, AR219:12, AR3114:8, AR219:7, AR313:12, AR251:12, AR248:12, AR274:10, AR053:10, AR315:10, AR253:9, AR280:8, AR314:8, AR219:7,
				AR096:6, AR218:6, AR089:6, AR299:6, AR316:5, AR192:5, AR271:5, AR186:4, AR039:4, AR282:4,
				[AR206:4, AR244:3, AR300:3, AR183:3, AR247:3, AR232:3, AR196:3, AR2000:3, AR240:3, AR202:3, AR246:2, AR215:2,
				AR199:2, AR264:2, AR277:2, AR243:2, AR033:2, AR176:2, AR061:1, AR161:1, AR272:1, AR214:1,
				AR193:1, AR169:1, AR175:1, AR261:1, AR283:1, AR178:1, AR297:1 L0794:5, H0036:3, S0360:2, S0442:1, S0476:1, H0014:1, S0314:1, L0772:1, L0646:1, L0764:1, L0803:1 and H0689:1.
	HUFBY15	846380	878	
999	HUFEF62	645101	570	AR207:39, AR214:22, AR222:21, AR195:21, AR223:20, AR235:20, AR169:19, AR198:19, AR224:19,
				AR17:16, AR215:16, AR089:15, AR225:14, AR053:14, AR221:14, AR295:14, AR261:14, AR311:14,
				AR245:14, AR264:14, AR308:13, AR165:13, AR242:13, AR197:13, AR309:13, AR215:13, AR196:12,
				AR166:12, AR164:12, AR039:12, AR246:11, AR161:11, AR177:11, AR236:11, AR162:11, AR201:11,
-				AR193:10, AR297:10, AR288:10, AR312:10, AR163:10, AR240:10, AR316:10, AR181:10, AR271:9,
				AR204:9, AR285:9, AR210:9, AR060:9, AR033:9, AR23:9, AR282:9, AR230:9, AR299:9, AR275:8,
				AR313.8, AR286.8, AR174.8, AR252.8, AR296.8, AR254.8, AR1865.6, AR165.6, AR253.6, AR216.9,
				[AR243:7, AR291:7, AR196:7, AR283:1, AR104:1, AR211:1, AR274:1, AR390:1, AR193:1, AR
				AK20011, AK11311, AK03311, AK23011, AK103111, AK24111, AK24111, AK24111, AK24111, AK2411, AK2411, AK17915, AK17915, AK17916, AK17
				AR219-5 AR176-5 AR226-5, AR239-5, AR268-5, AR228-5, AR203-5, AR289-5, AR255-5, AR227-5,
				AR266:5, AR190:5, AR237:5, AR233:5, AR260:5, AR256:5, AR232:5, AR294:5, AR182:5, AR270:5,
_				AR061:4, AR180:4, AR269:4, AR267:4, AR290:4 H0506:1
	HUFEF62	630097	879	THE COURT CONTRACT
261	HUKAH51	1352424	571	AR039:323, AR104:317, AR055:287, AR060:230, AR185:220, AR089:214, AR300:199, AR282:11/4,
				AR240:174, AR316:160, AR096:135, AR277:128, AR299:121, AR263:106, AR217:59, AR216:62, AR316:160, AR
				00110.E0, E01111.0 COLUMN 11 11 11 11 11 11 11 11 11 11 11 11 11

			AR060:5, AR219:5, AR225:5, AR280:4, AR177:4, AR185:4, AR170:4, AR283:4, AR292:4, AR182:4, AR280:3, AR289:3, AR206:3, AR291:3,	
			AR204:3, AR234:3, AR277:3, AR259:3, AR256:3, AR261:3, AR262:3, AR231:3, AR293:3, AR257:3,	
			AR228:3, AR296:3, AR295:3, AR255:3, AR033:3, AR298:3, AR287:3, AR288:3, AR184:3,	
			AR224:2, AR315:2, AR237:2, AR168:2, AR061:2, AR286:2, AR288:2, AR211:2, AR211:4, AR222:2,	
			AR236:2, AR239:2, AR171:2, AR294:2, AR210:2, AR713:1, AR281:1, AR222:1, AR169:1, AR214:1,	_
			AR260:1 L0747:9, H0251:8, L0742:7, L0748:7, L0439:7, S0360:6, L0754:6, L0759:6, H0013:5, H0553:5,	
			H0059:5, L0770:5, L0771:5, L0809:5, L0664:5, H0520:5, L0752:5, S0140:4, H0052:4, H0124:4, H0616:4,	
			H0529:4, L0768:4, L0794:4, L0775:4, L0378:4, L0665:4, H0144:4, H0658:4, L0602:4, S0408:3, S0132:3,	
			H0617:3, H0100:3, L0639:3, L5566:3, L0659:3, L0666:3, H0670:3, S0206:3, L0731:3, L0731:3, L0736:3,	
			L0003:3, 30114:2, 30442:2, 30444:2, 20717:2, 110530:2, 30222:2; 110530:2, 20038:2, 10351:2, H0494:2, H0644:2, H0413:2, 10413:2, 10351:2, H0494:2, H0498:2, H0413:2, S0038:2, L0351:2, H0494:2, H0498:2, H0413:2, S0038:2, L0351:2, H0494:2, H0413:2, H0413:2, S0038:2, L0351:2, H0494:2, H0413:2, H	
			10480.2, 11023.2, 110343.2, 10761.2, 10764.2, 10773.2, 10803.2, 10527.2, 10657.2, 10783.2, 10663.2,	
			H0547-2, S0126:2, H0684:2, H0672:2, H0651:2, S0406:2, H0555:2, H0479:2, S0028:2, L0740:2, L0749:2,	
			1,0750:2,1,0777:2,1,0596:2,H0170:1,H0265:1,H0556:1,H0686:1,S0040:1,H0716:1,S0212:1,H0483:1,	
			H0255:1, H0661:1, H0663:1, S0418:1, S0420:1, L0619:1, S0358:1, H0329:1, H0741:1, H0208:1, H0371:1,	
			H0645:1, H0393:1, H0441:1, H0607:1, H0592:1, S0005:1, H0632:1, L2498:1, L3653:1, H0156:1, L0021:1,	
			S0010;1. S0474:1, H0581:1, H0194:1, L0040:1, H0231:1, H0544:1, H0123:1, L0471:1, H0024:1, H0014:1,	
			L0163:1, S0051:1, H0071:1, H0594:1, S0334:1, H0687:1, H0039:1, H0673:1, H0040:1, T0067:1, H0264:1,	
			H0269:1, T0041:1, S0448:1, S0440:1, H0641:1, H0633:1, H0647:1, H0649:1, S0002:1, L0796:1, L0637:1,	_
			L3904:1, L5575:1, L5565:1, L3905:1, L0772:1, L0800:1, L0374:1, L0644:1, L0645:1, L0765:1, L0766:1,	
			L0549:1, L0650:1, L0774:1, L0806:1, L0805:1, L0384:1, L5622:1, L5623:1, S0374:1, H0689:1, H0690:1,	
			H0659:1, H0660:1, H0666:1, H0539:1, S0380:1, H0518:1, S0152:1, H0521:1, H0522:1, H0696:1, S0146:1,	
			H0436:1, H0678:1, S0390:1, S3014:1, S0027:1, L0745:1, L0779:1, L0780:1, L0753:1, L0757:1, S0434:1,	
			S0436:1, L0592:1, H0653:1, H0667:1, S0194:1, S0276:1, L0698:1, L0462:1 and H0352:1.	Т
565 HIISIG64	566762	575	<u> AR291:47, AR292:35, AR297:31, AR259:24, AR296:24, AR294:23, AR260:23, AR298:22, AR258:19, </u>	
			AR285:19, AR287:18, AR293:17, AR257:16, AR262:15, AR255:15, AR286:14, AR225:13, AR266:12,	
			AR289:12, AR184:12, AR256:12, AR215:9, AR284:9, AR290:9, AR183:8, AR191:8, AR269:8, AR242:8,	
			AR270:8, AR288:7, AR190:7, AR261:7, AR236:7, AR180:7, AR173:7, AR182:7, AR170:6, AR175:6,	_
			AR200:6, AR295:6, AR267:6, AR268:6, AR174:6, AR238:5, AR221:5, AR053:5, AR235:5, AR249:5,	
-			AR179:5, AR232:5, AR274:5, AR250:5, AR171:5, AR052:4, AR243:4, AR178:4, AR193:4, AR226:4,	
	_		AR219:4, AR228:4, AR181:4, AR229:4, AR213:4, AR231:4, AR237:3, AR199:3, AR244:3, AR254:3,	
			AK235:3, AK510:3, AK180:3, AK190:3, AK103:3, AK107:3, AK210:3, AK210:3, AK310:3, AK310:3, AK180:3, AK100:3,	٦

	·		·	AR218:3, AR189:3, AR313:3, AR246:3, AR164:3, AR168:3, AR239:3, AR039:3, AR282:3, AR234:2, AR230:2, AR207:2, AR189:2, AR300:2, AR172:2, AR206:2, AR281:2, AR061:2, AR163:2, AR177:2, AR223:2, AR223:2, AR281:2, AR061:2, AR163:2, AR177:2, AR223:2, AR223:2, AR296:2, AR296:2, AR033:2, AR211:2, AR185:2, AR104:2, AR309:2, AR310:2, AR308:1, AR217:1, AR265:1, AR210:1, AR217:1, AR247:1, AR240:1, AR240:1, AR240:1, AR247:1, H0050:1, H0070:1, H0070:1, H0728:1, H0641:1, H0628:1, H0628:1, H0641:1, H0641:1, H0638:1, AR247:1, AR247:1, AR247:1, AR247:1, H0641:1, H0638:1, AR247:1, AR247:1, AR247:1, H0641:1, H0638:1, H0723:1, L0723:1, L0748:1, L0768:1, H0519:1, H0658:1, H0518:1, S0152:1, S0146:1, S0406:1, H0555:1, H0723:1, L0748:1, L0750:1, H0772:1, H0772:1, L0748:1, L0750:1, H0772:1, H0772:1, L0748:1, L0750:1, H0770:1, H0770:1, L0750:1, L0750:1, H0770:1, H0770:1, L0750:1, L0750:1, H0770:1, H070:1, L0750:1, L0750:1, H0770:1, H070:1, L0750:1, H0770:1, H070:1, L0770:1, L0770:1, L0770:1, H0700:1, L0770:
366	HUSXS50	1352367	576	AR253:15, AR270:12, AR184:11, AR268:11, AR263:11, AR226:11, AR182:10, AR096:10, AR000:10, AR248:10, AR219:9, AR269:9, AR313:8, AR238:8, AR226:11, AR248:13, AR249:7, AR249:7, AR248:13, AR2248:10, AR219:9, AR269:9, AR313:8, AR239:7, AR238:6, AR234:6, AR249:7, AR310:4, AR310:3, H0043:4, H0043:4, H0043:4, H0043:3, H0043:3, H0043:3, H0043:1, H0043:1, H0043:1, H0040:1, H0040:

				L0809:1, L5622:1, L0788:1, L0664:1, H0703:1, S0374:1, L3811:1, S0126:1, H0659:1, H0658:1, H0670:1,
				H0660:1, H0672:1, S0328:1, H0522:1, S3014:1, S0206:1, S0032:1, L0741:1, L0779:1, L0777:1, L0753:1, L0757:1, L0758:1, H0445:1, S0434:1, L0599:1, S0011:1, S0026:1, H0665:1, H0667:1, H0423:1 and H0721:1.
	HUSXS50	883176	882	
	HUSXS50	655372	883	
267	HWAAD63	838626	577	AR196:17, AR173:14, AR161:14, AR162:14, AR241:14, AR163:14, AR165:13, AR313:12, AR166:12,
				ARI64:12, AR262:12, AR264:11, AR236:11, AR199:10, AR191:10, AR174:9, AR178:9, AR257:9, AR235:9,
				AR180:9, AR263:8, AR203:8, AR181:8, AR200:8, AR229:8, AR274:7, AR189:7, AR275:7, AR311:7,
				AR240:7, AR247:7, AR297:7, AR312:7, AR175:7, AR308:7, AR212:7, AR261:7, AR169:7, AR265:7,
				AR188:7, AR234:6, AR177:6, AR221:6, AR194:6, AR287:6, AR242:6, AR258:6, AR207:6, AR230:6,
				AR255:6, AR176:6, AR293:6, AR168:6, AR271:6, AR224:6, AR179:6, AR270:6, AR185:6, AR192:6,
				AR233:5, AR198:5, AR300:5, AR096:5, AR214:5, AR216:5, AR183:5, AR238:5, AR272:5, AR269:5,
				AR039:5, AR226:5, AR223:5, AR299:5, AR296:5, AR215:5, AR285:5, AR260:5, AR089:5, AR288:5,
				AR182:4, AR204:4, AR239:4, AR228:4, AR222:4, AR213:4, AR309:4, AR231:4, AR060:4, AR033:4,
				AR210:4, AR252:4, AR273:4, AR286:4, AR053:4, AR268:4, AR294:4, AR237:4, AR193:4, AR172:4,
				AR243:4, AR218:4, AR267:4, AR277:4, AR310:4, AR104:3, AR295:3, AR291:3, AR190:3, AR225:3,
				[AR282;3, AR316;3, AR227;3, AR290;3, AR171;3, AR217;3, AR186;3, AR211;3, AR266;3, AR195;3,
				AR219:3, AR249:3, AR292:3, AR052:3, AR201:3, AR206:2, AR245:2, AR314:2, AR232:2, AR202:2,
				AR298:2, AR289:2, AR315:2, AR256:2, AR244:2, AR259:2, AR205:2, AR246:2, AR061:1, AR184:1,
				AR284:1, AR280:1, AR283:1, AR055:1 H0441:1, H0581:1 and H0604:1.
	HWAAD63	833089	884	
	HWAAD63	793875	882	
268	HWABA81	688085	878	AR253:12, AR215:9, AR213:8, AR254:7, AR250:7, AR225:7, AR221:7, AR053:6, AR223:6, AR212:6,
				AR291:5, AR282:5, AR165:5, AR164:5, AR235:5, AR096:5, AR196:5, AR271:5, AR161:5, AR162:5,
				AR290:4, AR178:4, AR169:4, AR089:4, AR192:4, AR224:4, AR183:4, AR263:4, AR039:4, AR246:4,
				AR308:4, AR313:4, AR297:4, AR285:4, AR255:4, AR261:4, AR216:4, AR309:4, AR200:4, AR172:4,
				AR257:4, AR270:4, AR268:4, AR193:4, AR296:4, AR173:4, AR262:4, AR300:3, AR269:3, AR275:3,
				[AR175:3, AR277:3, AR191:3, AR240:3, AR286:3, AR288:3, AR189:3, AR316:3, AR188:3, AR179:3,
				AR311:3, AR229:3, AR267:3, AR218:3, AR289:3, AR247:3, AR198:3, AR174:3, AR238:3, AR287:3,
				[AR236:3, AR207:3, AR060:3, AR293:3, AR185:3, AR219:3, AR182:3, AR230:3, AR203:3, AR294:3,
				AR171:2, AR210:2, AR181:2, AR033:2, AR264:2, AR190:2, AR237:2, AR201:2, AR234:2, AR205:2,
				AR299:2, AR312:2, AR274:2, AR217:2, AR258:2, AR266:2, AR231:2, AR326:2, AR170:2, AR195:2,
				AR199:2, AR233:2, AR260:2, AR177:2, AR232:2, AR222:2, AR228:2, AR239:2, AR180:2, AR061:2,
				AR163:2, AR272:2, AR211:2, AR104:1, AR283:1, AR242:1, AR252:1, AR245:1, AR256:1, AR176:1

				H0581:2
695	HWABY10	768334	i i	AR218:148, AR313:134, AR219:132, AR240:123, AR316:100, AR096:88, AR089:84, AR282:67, AR277:66, AR283:61, AR300:59, AR060:58, AR299:57, AR039:54, AR185:47, AR104:32, AR055:30 H0521:8, L0756:6, L0455:5, L0770:5, L0752:5, L0757:5, H0581:4, H0457:4, L0769:4, L0655:4, L0731:4, H0686:3, S0442:3, L0659:3, L0666:3, H0658:3, L0747:3, L0749:3, H0445:3, S0436:3, L0731:4, H0686:3, H0584:2, H0716:2, H0580:2, H0521:2, H0546:2, H0413:2, L3904:2, L5565:2, L0761:2, L0772:2, L0772:2, L0657:2, L0657:2, L0663:2, L0438:2, H0689:2, L0745:2, L0590:2, L0581:2, L0599:2, H0265:1, H0167:1, S0114:1, H0656:1, S0212:1, H0661:1, H0392:1, H0392:1, H0542:1, H0592:1, H0582:1, H0486:1, H0013:1, H0728:1, S0045:1, T0048:1, H0749:1, S0445:1, H0068:1, H0068:1, L0544:1, H0596:1, H0592:1, H0618:1, H0618:1, H0618:1, H0667:1, L0644:1, L0648:1, L0662:1, L0763:1, L0805:1, L0709:1,
570	HWADJ89	799506	280	AR252:29, AR250:29, AR253:21, AR224:10, ARX245.0, ARX103.3, ARX103.3, ARX103.3, AR265.2, AR252:29, AR252:29, AR253:21, AR243:4, AR274:4, AR161:5, AR246:5, AR246:5, AR246:4, AR271:5, AR240:5, AR263:4, AR263:4, AR243:4, AR274:4, AR195:4, AR205:4, AR213:4, AR205:4, AR213:4, AR205:4, AR213:4, AR205:3, AR264:4, AR192:4, AR173:4, AR207:3, AR265:3, AR266:3, AR276:3, AR266:3, AR276:3, AR276:2, AR276:1, A
571	HWBAO62	838164	581	AR252:43, AR264:25, AR311:20, AR308:19, AR24:110, AR24:113, AR240:13, AR264:25, AR311:20, AR308:19, AR240:113, AR203:13, AR109:13, AR203:13, AR203:13, AR203:13, AR203:13, AR203:13, AR203:13, AR203:8, AR203:8, AR203:8, AR203:8, AR203:8, AR203:8, AR203:8, AR203:9, AR203:7, AR198:7, AR190:7, AR160:7, AR163:7, AR203:7, AR160:5, AR203:5, AR203:4, A

				AR266:4, AR179:3, AR217:3, AR219:3, AR185:3, AR171:3, AR177:3, AR296:3, AR175:3, AR282:3, AR313:3, AR039:3, AR039:3, AR217:3, AR275:3, AR236:3, AR2
				AR316:3, AR295:3, AR033:3, AR231:3, AR291:3, AR238:3, AR265:3, AR239:2, AK289:2, AK500:2, AK500:2, AR500:2, AR520:3, AR523:2, AR523:2, AR237:2, AR237:2, AR238:2, AR237:2, AR238:2, AR237:2, AR238:2, AR238:2, AR237:2, AR238:2, AR2
				AR060:2, AR293:2, AR294:2, AR260:2, AR286:2, AR299:2, AR226:2, AR206:2, AR310:2, AR061:2,
				AR273:2, AR186:2, AR292:1, AR256:1, AR104:1, AR281:1, AR227:1, AR283:1 H0580:1 and H0427:1.
	HWBAO62	625914	988	
572	HWBAR14	1107118	282	AR215:4, AR242:3, AR272:3, AR217:3, AR163:3, AR165:2, AR164:2, AR246:2, AR204:2, AR254:2, AR166:2, AR264:2, AR2635:2, AR309:2, AR213:2, AR250:2, AR161:2, AR162:2, AR221:2, AR261:2,
				AR288:2, AR188:1, AR089:1, AR205:1, AR177:1, AR096:1, AR216:1, AR277:1, AR230:1, AR296:1,
				[AR282:1, AR287:1, AR201:1, AR055:1, AR267:1, AR200:1, AR262:1, AR269:1, AR286:1, LU783:3, LD789:4, LD518:3, H0580:2, L0517:2, L0750:2, L0601:2, H0265:1, H0012:1, S6028:1, H0687:1, T0006:1,
				H0560:1, H0561:1, L0646:1, L0805:1, L0659:1, L0529:1, L0789:1, S0053:1, H0693:1, H0593:1, H0694:1, L0366:1 and H0665:1.
	HWBAR14	845408	887	
	HWBAR14	873239	888	
	HWBAR14	762339	688	
573	HWBAR88	836469	583	AR241:5, AR263:4, AR268:3, AR197:3, AR214:3, AR252:3, AR249:3, AR193:2, AR162:2, AR166:2,
				AR161:2, AR264:2, AR274:2, AR163:2, AR223:2, AR192:2, AR309:2, AK282:2, AR101:2,
				AR273:2, AR292:2, AR312:2, AR311:2, AR201:2, AR168:2, AR165:1, AR299:1, AR204:1, AR022:1,
			_	AR198:1, AR172:1, AR297:1, AR240:1, AR053:1, AR178:1, AR230:1, AR243:1 H0580:2, S0011:2,
				L3643:1, H0650:1, H0272:1, H0412:1, H0144:1 and H0423:1.
574	HWBCB89	1093347	584	AR207.18, AR222:18, AR283:17, AR223:17, AR214:17, AR263:16, AR224:16, AR169:16, AR089:15,
				AR316:14, AR277:13, AR172:13, AR195:13, AR171:12, AR219:12, AR225:12, AR096:12, AR218:12,
				AR168:12, AR282:11, AR253:11, ARX25:11, ARX25:11, ARX25:11, ARX25:11, ARX25:11, ARX25:11, ARX25:11, ARX25:11,
				AR104:11, AR192:11, AR311:11, AR1/0:11, AR204:10, AR103:10, AR213:10, AR237:10, AR213:10, AR331:10, AR167:0
				ARI66:10, ARI64:10, ARZ46:10, ARZ16:3, ARZ/1:3, ARI03:3, AR306:3, AR104:3, AR104:3, ARX77:3, AR277:3, AR2707:3
				AK212.9, AK196.9, AK252.9, AK240.6, AK059.6, AK059.1, AK060.1, AK196.7, AK177.7, AK201.7,
				AR196:7, AR033:7, AR288:6, AR236:6, AR272:6, AR243:6, AR268:6, AR174:6, AR181:5, AR173:5,
				AR176:5, AR285:5, AR274:5, AR266:5, AR291:5, AR238:5, AR297:5, AR229:5, AR204:5, AR286:5,
				AR270:5, AR296:5, AR175:5, AR189:5, AR289:5, AR191:4, AR247:4, AR188:4, AR257:4, AR199:4,
	<del></del>			AR178:4, AR226:4, AR269:4, AR232:4, AR267:4, AR183:4, AR290:4, AR239:4, AR190:4, AR254:4,
				AR293:4, AR231:4, AR262:4, AR258:4, AR294:3, AR234:3, AR200:3, AR287:3, AR255:3, AR237:3,

				AR182:3, AR250:3, AR260:3, AR230:3, AR227:3, AR061:3, AR179:3, AR180:3, AR203:3, AR233:3, AR256:2, AR228:2, AR253:1 L0777:6, L0766:4, H0090:3, L0759:3, H0657:2, S0360:2, H0318:2, L0471:2, AR256:2, AR258:2, AR253:1 L0777:6, L0766:4, H0090:3, L0759:3, H0657:2, S0360:2, H0318:2, L0471:2, AR256:2, AR228:2, AR258:1
				H0031:2, L0659:2, L0740:2, L0747:2, L0750:2, L0758:2, H0170:1, H0536:1, H0536:1, H0341:1, 30418:1, H0031:2, L0740:1, H0349:1, H0349:1, H0549:1, H05
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	TWDCD60	016988	890	בויסטיביים מוות ביסטיביים.
	II W DCD07	000770		AR196:23, AR165:38 AP186:37 AR196:35 AR299:23, AR300:21, AR185:18, AK103:17,
575	HWBCP79	846382	585	AR313:44, AR(059:36, AR196:26, AR095:27, AR105:27, AR173:14, AR316:14, AR165:14, AR161:17, AR162:17, AR240:16, AR277:15, AR164:15, AR234:11, AR174:11, AR264:11, AR258:11, AR299:13, AR199:13, AR247:12, AR860:12, AR175:12, AR234:11, AR174:11, AR264:11, AR258:34, AR193:10, AR191:10, AR191:10, AR192:10, AR193:9, AR193:9, AR268:34, AR267:8, AR268:8, AR268:36,
				AR188:8, AR236:8, AR282:8, AR233:8, AR271:8, AR296:7, AR312:7, AR206:7, AR183:7, AR188:8, AR236:8, AR282:8, AR2
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				AR310.3, AR207.3, AR225.3, AR224.3, AR289.2, AR232.2, AR168.2, AR223.2, AR214.2, AR266.2, AR310.3, AR207.3, AR207.3, AR172.1, AR061.1 H0580.1 and H0169.1.
	Ordenana	646077	108	AR222.1, AR1 1.2, (M.2.)
878	HWBDP28	1352265	丄	AR271:15, AR163:11, AR060:11, AR161:11, AR162:11, AR165:10, AR254:10, AR164:10, AR166:9,
) }				AR263:9, AR096:9, AR312:9, AR274:9, AR245:9, AR192:9, AR204:6, AR235:6, AR305:0; AR240:7, AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR305:0; AR3
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				AR246.5, AR316.5, AR188.5, AR299.5, AR185.5, AR224.5, AR17.5.3, AR217.5, AR193.5, AR268.5,
				AR176:5, AR207:5, AR225:5, AR297:5, AR165:5, AR246:4, AR247:4, AR269:4, AR214:4, AR257:4,
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				AR258:3, AR215:3, AR201:3, AR179:3, AR210:3, AR219:3, AR260:3, AR280:3, AR218:3, AR229:3, AR228:3, AR229:2, AR239:2, AR2
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				AR232:2, AR226:2, AR237:2, AR061:2, AR227:2, AR228:2, AR233:1 S0380:3, H0255:2, H0617:2, L0809:2,
				H0265:1, H0580:1, H0486:1, T0039:1, H0575:1, S6028:1, H0130:1, S0002:1, L0709:1, L0646:1, L0703:1, L0790:1, L0666:1, L0665:1, H0435:1, H0696:1, L0749:1 and H0506:1.
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				AR221:22, AR297:21, AR253:20, AR216:20, AR217:20, AR245:19, AR213:18, AR183:18, AR250:18,
				AR288:17, AR205:16, AR179:16, AR295:16, AR283:15, AR270:15, AR039:15, AR256:15, AR193:15,
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				AR316:12, AR195:12, AR242:12, AR180:12, AR268:11, AR260:11, AR192:11, AR176:11, AR175:11,
				AR089:11, AR267:11, AR181:10, AR212:10, AR173:10, AR293:10, AR182:9, AR163:9, AR262:9, AR161:9,
				AR162:9, AR287:9, AR240:9, AR201:9, AR165:8, AR247:8, AR164:8, AR204:8, AR207:8, AR166:8,
				[AR294:8, AR286:8, AR237:8, AR236:8, AR198:8, AR290:7, AR238:7, AR282:7, AR104:7, AR312:7,
				AR313:7, AR311:7, AR033:7, AR299:6, AR272:6, AR309:6, AR257:6, AR308:6, AR060:6, AR264:6,
				AR053:5, AR177:5, AR234:5, AR263:5, AR230:5, AR252:5, AR300:5, AR189:5, AR190:5, AR210:5,
	_			AR199:5, AR274:5, AR258:5, AR229:4, AR185:4, AR174:4, AR275:4, AR219:4, AR188:4, AR055:4,
				AR277:4, AR061:4, AR191:4, AR196:4, AR226:4, AR218:4, AR231:4, AR200:3, AR228:3, AR227:3,
				AR239:3, AR211:2, AR203:2, AR233:2, AR232:1 H0556:7, H0581:5, H0265:4, H0083:4, H0424:4, H0543:4,
				H0580:3, H0318:3, L0766:3, L0783:3, H0422:3, H0650:2, L2599:2, H0695:2, H0635:2, H0457:2, H0620:2,
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				AR224:4, AR195:4, AR168:4, AR222:4, AR196:4, AR312:3, AR274:3, AR207:3, AR201:3, AR272:3,
				AR183:3, AR191:3, AR261:3, AR199:3, AR225:3, AR221:3, AR309:3, AR178:3, AR250:3, AR180:3,
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				AR240:2, AR213:2, AR288:2, AR197:2, AR190:2, AR313:2, AR188:2, AR282:2, AR184:2, AR182:2,
				AR174:2, AR275:2, AR262:2, AR255:2, AR033:2, AR295:2, AR089:2, AR297:2, AR246:2, AR203:2,
	_			AR296:2, AR271:2, AR205:2, AR216:2, AR269:2, AR230:2, AR096:2, AR060:2, AR277:2, AR294:1,

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				AR175:1, AR268:1, AR247:1, AR291:1, AR258:1, AR181:1, AR299:1, AR236:1, AR300:1, AR316:1,
				AR170:1, AR238:1, AR285:1, AR234:1, AR242:1, AR229:1, AR292:1, AR293:1, AR104:1 H0457:6, H0620:2, H0593:2, H0543:2, H0650:1, H0580:1, H0580:1, H0680:1, H0069:1 and H0264:1.
	HWBFE57	790706	895	
	HWBFE57	876136	968	Co Cook: 47 Cook
579	HWDAC39	1310817	589	AR308:49, AR053:40, AR272:35, AR312:28, AR212:25, AR309:23, AR200:22, AR252:22, AR213:20,
				AR177:16, AR210:15, AR211:14, AR269:13, AR290:13, AR174:13, AR268:12, AR183:11, AR313:11,
				ARI96:11, AR218:11, AR189:11, AR173:11, AR173:10, AR240:10, AR203:10, AR264:9, AR197:9,
				ARCOUS, ARISTS, ARTINS, ARTISTS, ARTISS, ARTISS, ARTICS, ARCO3.8, ART80:7, AR311:7,
				AR199.7. AR274.7. AR164.7. AR165.7. AR247.7, AR245.7, AR179.7, AR166.6, AR266.6, AR242.6,
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				AR182:4, AR230:4, AR261:4, AR231:4, AR201:4, AR243:4, AR316:4, AR255:4, AR238:4, AR291:4,
				AR295:4, AR288:4, AR223:4, AR237:4, AR285:3, AR256:3, AR299:3, AR2823; AR236:3, AR257:3,
				AR287;3, AR297;3, AR262;3, AR293;3, AR207;3, AR217;3, AR232;3, AR239;3, AR226;2, AR233;2,
				AR286;2. AR228;2. AR294;2, AR089;2, AR277;2, AR221;2, AR224;2, AR222;2, AR061;2, AR258;2,
				AR214:2, AR168:2, AR275:2, AR260:2, AR171:2, AR060:2, AR039:2, AR296:1, AR216:1, AR283:1,
				AR169:1, AR235:1 H0600:1
	HWDAC39	634781	897	
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}				AR180:4, AR215:4, AR193:3, AR195:3, AR165:3, AR272:3, AR166:3, AR164:3, AR163:3, AR185:3,
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				AR282.2, AR199.2, AR183.2, AR213.1, AR233.1, AR214:1, AR262:1, AR240:1, AR221:1, AR201:1,
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	HWDAH38	889281	868	
581	HWHGP71	995431	591	AR244:4, AR169:4, AR170:4, AR215:3, AR252:3, AR250:3, AR180:3, AR30:3, AR184:2, AR207:2,
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				AK251:4, AK104:4, AK191:4, AK103:4, AK109:4, AK1 <i>11:4, AK29:4, AK243:4, AK</i> 100:4, AK202:3,  AR269:3, AR166:3, AR174:3, AR234:3, AR268:3, AR239:3, AR265:3, AR060:3, AR225:3, AR270:3,
				AR186:3, AR271:3, AR247:3, AR311:3, AR173:3, AR257:3, AR314:3, AR274:3, AR096:3, AR290:3,
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				MRITET, MR292.1, ARC94.1, ARC93.1, ARC179.1, ARC90.1, ARC97.1, ARC170.1, ARC90.1, AR
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	HWHGQ49	636080	900	
583	HWHGU54	569569	593	AR223:5, AR169:4, AR171:4, AR221:4, AR224:4, AR264:4, AR214:4, AR261:3, AR235:3, AR263:3,
				AR195:3, AR225:3, AR311:3, AR168:3, AR216:3, AR222:3, AR238:3, AR183:3, AR172:3, AR297:2,
				AR212:2, AR162:2, AR161:2, AR251:2, AR170:2, AR217:2, AR269:2, AR207:2, AR272:2, AR228:2,
-				AR288:2, AR308:2, AR237:2, AR231:2, AR163:2, AR266:2, AR312:2, AR176:2, AR282:2, AR165:2,
				AR257:2, AR262:2, AR277:2, AR200:2, AR196:2, AR198:2, AR173:2, AR254:2, AR213:2, AR166:2,
				AR180:2, AR226:2, AR181:2, AR234:2, AR298:2, AR189:2, AR236:2, AR271:2, AR197:2, AR089:2,
				AR246:2, AR295:2, AR193:2, AR239:2, AR274:1, AR178:1, AR061:1, AR227:1, AR300:1, AR177:1,
				AR164:1, AR188:1, AR267:1, AR247:1, AR096:1, AR287:1, AR229:1, AR211:1, AR243:1, AR201:1,
				AR191:1, AR204:1, AR190:1, AR179:1, AR270:1, AR182:1, AR230:1, AR294:1, AR199:1, AR285:1,
				AR291:1, AR290:1, AR316:1, AR286:1, AR296:1, AR060:1, AR309:1, AR210:1 H0586:3 and L0777:2.
584	HWHGZ51	886212	594	AR283:18, AR089:18, AR316:16, AR282:16, AR060:15, AR277:15, AR104:13, AR202:13, AR246:12,
				AR241:12, AR281:11, AR194:11, AR240:11, AR055:11, AR096:10, AR299:10, AR039:10, AR219:9,
				AR206:9, AR218:9, AR205:8, AR313:8, AR315:8, AR185:8, AR243:7, AR204:7, AR300:7, AR265:6,
				AR280:6, AR192:6, AR263:6, AR244:6, AR271:5, AR198:5, AR266:5, AR247:5, AR289:5, AR284:5,
				AR285:5, AR314:5, AR295:5, AR273:5, AR296:4, AR291:4, AR310:4, AR113:4, AR182:4, AR232:4,

585	HWHHL34	805642	595	AR269:4, AR183:4, AR275:4, AR294:4, AR267:3, AR033:3, AR177:3, AR312:3, AR268:3, AR228:3, AR229:3, AR229:3, AR286:3, AR184:3, AR399:3, AR238:3, AR175:3, AR053:3, AR229:3, AR229:3, AR290:3, L0550:1, L0550:1, L0560:1, L0560:1, L0560:1, L060:2, L076:2, L060:2, L0731:2, H0550:1, H0571:1, H0380:1, L0653:1, L0659:1, L076:2, L0809:2, H0696:2, L0731:2, H0550:1, L0601:1 and L3603:1.  AR260:1, L2502:1, L0780:1, L071:1, S0328:1, L0722:1, L0601:1 and L3603:1.  AR260:16, AR291:51, AR292:48, AR290:38, AR294:34, AR290:34, AR290:32, AR218:23, AR218:23, AR218:23, AR290:10, AR2	
		·		H0251:3, L0157:3, S0051:3, H0357:3, 10006:3, H0533:3, H0674:2, L0052:3, L0057:3, L0157:3, S0051:3, H0542:3, H0624:2, H0710:2, H0713:2, S0134:2, H0650:2, S0212:2, H0644:2, H0539:3, S0406:3, L0740:3, H0542:2, H0741:2, H0643:2, L0051:2, H0650:2, H0056:2, S0040:2, H0626:2, H0626:2, H0626:2, H0626:2, H0626:2, H0636:2, H0038:2, H0038:2, H0038:2, H0038:2, H0038:2, H0038:2, H0038:2, H0050:2, H0050:2, H0650:2, H0650:2, H0650:2, H0659:2, H0659:2, H0659:2, H0658:2, S0340:2, H0659:2, H0658:2, L0591:2, H0050:1, H0020:1, H0050:1, H0050:1, H0050:1, H0020:1, H0020:1, H0050:1, H0020:1, H0050:1, H0050:1, H0050:1, H0050:1, H0050:1, H0020:1, H0050:1, H00	

				H0376:1, H0616:1, H0264:1, H0059:1, L0364:1, T0042:1, H0494:1, L0475:1, H0625:1, S0464:1, S0438:1, H0649:1, S0002:1, H0695:1, L0369:1, L0371:1, L0372:1, L0771:1, L0521:1, L0768:1, L0373:1, L03
				L0544:1, L0788:1, L0791:1, L0792:1, L0663:1, S0053:1, S0374:1, S0148:1, H0519:1, S0126:1, S0330:1, S0380:1, H0710:1, H0518:1, H0525:1, H0696:1, S0044:1, S0390:1, S3014:1, S0206:1, L0786:1, L0780:1, L0786:1, H0665:1, S0196:1 and H0506:1.
	HWHHL34	801943	106	
	· HWHHL34	341560	905	01 1/1 41 41 4144 41 4144 41
586	нжновъя	762842	296	AR274:28, AR247:26, AR272:21, AR096:21, AR283:21, AR213:20, AR312:19, AR240:19, AR161:18,
				AR162:18, AR163:18, AR172:17, AR311:17, AR216:17, AR309:17, AR313:11, AR291:17, AR294:17, AR204:17, AR164:15, AR089:15, AR166:15, AR266:13, AR266:
				AR205:13, AR1/3:13, AR204:13, AR1/1:13, AR109:13, AR106:13, AR1/0:15, AR222:13, AR212:13, AR212:11, AR214:12, AR214:12, AR214:13, AR223:11, AR273:11, AR217:11, AR217:11, AR246:11, AR316:11,
				AR224;11, AR290;10, AR175;10, AR210;10, AR178;10, AR243;10, AR188;10, AR269;10, AR271;10,
				AR288:10, AR242:9, AR277:9, AR189:9, AR289:9, AR176:9, AR268:9, AR181:9, AR180:9, AR255:9,
				AR250:9, AR221:9, AR299:9, AR253:9, AR275:9, AR295:9, AR297:9, AR262:8, AR267:8, AR190:8,
				AR296:8, AR177:8, AR235:8, AR225:8, AR174:8, AR053:8, AR300:8, AR257:8, AK211:8, AK053:8,
				AKI97.8, AK219.8, AK163.9, AK216.9, AK129.8, AKK208.7, AK198.7, AK192.6, AK191.6, AK256.6,
				AR193:1, AR2113:1, AR2113:1, AR214:1, AR214:1, AR2113:1,
				AR204:0, AR104:0, AR203:5, AR233:4, AR234:4, AR234:4, AR229:4, AR227:4, AR238:4,
				AR232.4 AR239.3 AR230.3 AR226.3 AR228.3 L0439.6 H0620.4 L0758.2, S0040.1, S0282.1, H0661.1,
				H0619:1, H0549:1, H0587:1, H0013:1, L0021:1, H0230:1, H0009:1, H0373:1, H0135:1, L0770:1, L0769:1,
				L0776:1, L0659:1, L0783:1, H0144:1, H0519:1, H0593:1, H0682:1, H0659:1, L0751:1, L0753:1 and L0759:1.
587	HWLEV32	1032602	597	AR039:14, AR313:12, AR096:8, AR089:7, AR299:7, AR185:5, AR277:5, AR282:5, AR316:4, AR300:4,
;				AR104:4, AR198:4, AR182:3, AR060:3, AR240:3, AR246:3, AR178:3, AR215:3, AR225:3, AR263:2,
				AR216:2, AR218:2, AR201:2, AR274:2, AR270:2, AR227:2, AR243:2, AR165:2, AR164:2, AR247:2,
		•		AR055:2, AR269:2, AR257:2, AR179:2, AR242:2, AR033:2, AR309:2, AR311:2, AR199:2, AR203:2,
				AR224:1, AR200:1, AR275:1, AR191:1, AR291:1, AR168:1, AR289:1, AR236:1, AR219:1, AR193:1,
				AR230:1, AR312:1, AR308:1, AR192:1 L0731:3, S0194:3, H0392:2, H0031:2, H0644:2, H0494:2, L0794:2,
				[L0803:2, L0666:2, S0330:2, S3014:2, L0747:2, L0777:2, L0758:2, S0026:2, H0550:1, H0717:1, S0226:1,
				S0282:1, L3658:1, S0418:1, S0356:1, S0354:1, S0444:1, S0360:1, H0722:1, L0717:1, H0431:1, S0360:1,
				H0421:1, H0052:1, H0150:1, S0388:1, H0083:1, H0252:1, H0604:1, H0030:1, H0412:1, L0769:1, L07662:1,
				1,0768:1,10375:1,10651:1,10805:1,1065/:1,10659:1,10809:1,1070:1,10063:1,1045:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1065:1,1

				S0406:1, H0555:1, H0436:1, S3012:1, S0027:1, L0745:1, L0749:1, L0750:1, L0780:1, H0707:1, S0436:1, L0591:1 and S0242:1.
	HWLEV32	873296	903	
	HWLEV32	881710	904	
	HWLEV32	846351	905	4D291.48 AD206.44
588	HWLIH65	793713	298	AR061:97, AR231:60, AR238:60, AR237:58, AR234:57, AR202:53, AR194:53, ARZ61:40, ARZ26:44,
				AR315:42, AR206:39, AR286:38, AR24:37, AR24:37, AR24:31,
				AR232:25, AR284:23, AR283:22, AR205:22, AR200:21, AR310:20, AR203:13, AR232:13, AR177:15,
				[AR298:17, AR184:17, AR192:11, ARZ40:11, ARZ43:11, AN020:11, AR316:12, AR104:12, AR296:12,
				AR282:15, AR198:13, AR186:13, AR207:13, AR229:13, AR300:12, AR313:12, AR277:12, AR285:11,
				AR251:12, AR291:12, AR249:12, AR247:12, AR252:11, AR240:10, AR218:10, AR259:10, AR286:10,
				PACESSIII, ARX20111, ARX20111, ARX20111, ARX2011,
				AK206.10, AK209.10, AK207.18, AR089.7 AR295.7, AR294.7, AR185.7, AR256.7, AR290.7, AR274.7,
				ANUSSIO, AND 12:01, AND 12:01, AND 10:01, AND 10:01, AND 10:03, AN
				AR272.3, AR216.2, AR308.3, AR216.3, AR217.3, AR217.3, AR214.2, AR199.2, AR233.2,
				AR104:3, AR100:3, AR201:4, AR217:1, AR210:1, AR172:1, AR311:1, AR257:1, AR171:1, AR297:1,
				AND 16-1 AR745-1 AR745-1 AR748-1 10774-3, H0521-3, L0777-3, S0356-2, S0408-2, H0124-2, H0494-2, L0766-2,
				10546:3 1 0751:3 1 0596:3 S0040:1 H0294:1, S0430:1, H0656:1, S0358:1, S0360:1, H0729:1, H0645:1,
				10000011, H05971 H05971 H05901 1,00451, S00031, H03161, H05981, S00361, H05911, L05641,
				H1050-1 H1050-1 H1050-1 H1050-1 L10640: L10662: L10775: 1, L10655: 1, L10659: 1, L10783: 1, L5622: 1, L10659: 1, L10669:
				10663-1 12653-1 H0701:1, H0689:1, H0672:1, H0539:1, S0406:1, L0439:1, L0749:1, L0786:1, S0434:1,
				S0436:1 H0543:1. S0424:1 and S0446:1.
1	177 4 7771	137370	905	AP213-41 AP173-25 AR163:25 AR166:25 AR196:23, AR161:23, AR162:23, AR165:22, AR164:21,
989	1/02/11		<u>}</u>	AR089-21 AR312:20 AR218:19, AR264:19, AR300:19, AR096:19, AR258:18, AR274:18, AR174:18,
				AR175-18 AR191-17 AR185-17 AR262-17, AR308-17, AR257-16, AR275-16, AR229-16, AR247-16,
				AR240:16 AR199:16 AR179:15 AR189:15 AR183:15, AR240:15, AR270:15, AR060:14, AR269:14,
				AR202:14 AR205:13 AR234:13 AR234:13 AR268:13, AR181:13, AR311:13, AR178:13, AR299:13,
				AR219:11, AR219:11, AR19:13, AR177:13, AR219:13, AR282:13, AR316:12, AR263:12, AR233:12,
				AR193-17 AR238-12 AR253:12 AR226:12, AR296:12, AR104:12, AR285:11, AR182:11, AR242:11,
				AR261:11 AR212:11 AR297:11, AR188:11, AR190:11, AR203:11, AR260:10, AR236:10, AR294:10,
	_			AR287:10, AR288:10, AR176:10, AR200:10, AR291:10, AR255:10, AR213:9, AR256:9, AR237:9, AR252:9,
				AR290:9, AR271:9, AR198:9, AR195:9, AR039:9, AR230:9, AR211:9, AR266:8, AR231:8, AR288:3,
				AR210:8, AR245:8, AR272:8, AR201:8, AR197:8, AR217:1, AR239:1, AR221:1, AR201:1, AR201:1,

				JAR253:7, AR267:7, AR228:7, AR235:7, AR254:7, AR204:7, AR232:6, AR243:6, AR205:6, AR250:6,
				AR061:5, AR055:5, AR246:5, AR172:4, AR168:4, AR223:4, AR222:3, AR170:3, AR216:3, AR217:3, AR171:2, AR275:2, AR215:1, AR224:1, AR221:1, H0583:1, H0485:1, H0581:1, S0053:1 and H0423:1.
290	HYBAR01	610383	909	AR308:42, AR192:7, AR205:4, AR161:3, AR198:3, AR178:3, AR162:3, AR163:3, AR193:3, AR216:3, AR169:3, AR176:3, AR270:3, AR089:3, AR246:3, AR269:3, AR204:3, AR291:3, AR039:2, AR164:2, AR169:3, AR176:3, AR270:3, AR270:3, AR269:3, AR
				AR254:2, AR215:2, AR053:2, AR25/:2, AR171:3, AR193:4, AR271:2, AR201:2, AR217:2, AR200:2,  AR060:2, AR316:2, AR173:2, AR282:2, AR275:2, AR262:2, AR264:2, AR213:2, AR288:2, AR104:2,
				AR272:1, AR182:1, AR225:1, AR183:1, AR166:1, AR311:1, AR294:1, AR165:1, AR299:1, AR283:1,
105	HVRRE75	834784	169	AR229:1, AR181:1, AR312:1, AR217:1, E07:11:1, E07:11:1 and E07:00:1. AR215:6, AR252:4, AR162:4, AR161:4, AR163:4, AR183:3, AR309:3, AR165:3, AR164:3, AR176:3,
7		5	3	AR235:3, AR166:3, AR270:3, AR204:3, AR245:3, AR192:3, AR216:3, AR193:2, AR242:2, AR257:2,
				AR277.2, AR196:2, AR089:2, AR201:2, AR250:2, AR266:2, AR313:2, AR182:2, AR291:2, AR255:2,
				AR2333.2, AR060:2, AR282:2, AR225:2, AR197:2, AR214:2, AR239:2, AR247:2, AR294:2, AR185:2,
				AR293:2, AR268:2, AR285:2, AR177:2, AR213:2, AR287:2, AR178:2, AR237:1, AR174:1, AR230:1,
				AR267:1, AR316:1, AR240:1, AR181:1, AR096:1, AR228:1, AR290:1, AR286:1, AR232:1, AR296:1,
				AR262:1, AR189:1, AR061:1, AR221:1, AR289:1, AR226:1, AR179:1, AR238:1, AR236:1, AR295:1,
				AR300:1, AR210:1 H0041:1
292	HAPSA79	846517	602	AR186:8. AR310:7. AR274:6, AR033:6, AR218:5, AR313:5, AR104:5, AR219:5, AR202:5, AR226:5,
) )				AR039:4, AR055:4, AR183:4, AR246:4, AR184:4, AR238:3, AR192:3, AR177:3, AR163:3, AR247:3,
				[AR175:3, AR309:3, AR275:3, AR089:3, AR273:3, AR206:3, AR271:3, AR251:3, AR162:3, AR161:3,
				AR164:3, AR292:3, AR282:3, AR166:3, AR096:3, AR237:3, AR176:3, AR243:3, AR227:3, AR240:3
				AR235:3, AR299:3, AR232:2, AR185:2, AR259:2, AR269:2, AR061:2, AR165:2, AR300:2, AR245:2,
				AR053:2, AR225:2, AR221:2, AR249:2, AR270:2, AR204:2, AR296:2, AR268:2, AR277:2, AR312:2,
				AR316:2, AR261:2, AR241:2, AR272:2, AR213:2, AR224:2, AR242:2, AR267:2, AR284:2, AR257:2,
				AR052:2, AR201:2, AR295:2, AR266:2, AR291:2, AR193:2, AR294:1, AR231:1, AR173:1, AR233:1,
				AR197:1, AR060:1, AR253:1, AR195:1, AR293:1, AR207:1, AR217:1, AR286:1, AR308:1, AR205:1,
				[AR285:1, AR172:1, AR178:1, AR179:1, AR290:1, AR256:1, AR181:1, AR216:1, AR228:1, AR214:1,
				AR198:1, AR212:1, AR229:1, AR244:1, AR171:1, AR168:1, AR182:1, AR311:1 L0731:12, L0747:9,
				H0651:5, L0759:5, H0644:4, H0013:3, L0748:3, L0439:3, L0779:3, H0575:2, H0652:2, H0327:2, H0050:2,
				H0083:2, L0769:2, L0662:2, L0438:2, H0539:2, L0743:2, L0750:2, L0588:2, H0716:1, L0002:1, L0443:1,
				S0001:1, S0360:1, H0645:1, H0411:1, H0587:1, H0333:1, H0486:1, S0010:1, S0050:1, H0051:1, H0428:1,
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				1107260.1, 110717.1, 11077.1, 120707.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1, 12007.1,

L0608:1 and S0398:1.	96	07	
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	HAPSA79	HAPSA79	

Table 1C summarizes additional polynucleotides encompassed by the invention (including cDNA clones related to the sequences (Clone ID:), contig sequences (contig identifier (Contig ID:) contig nucleotide sequence identifiers (SEQ ID NO:X)), and genomic sequences (SEQ ID NO:B). The first column provides a unique clone identifier, "Clone ID:", for a cDNA clone related to each contig sequence. The second column provides the sequence identifier, "SEQ ID NO:X", for each contig sequence. The third column provides a unique contig identifier, "Contig ID:" for each contig sequence. The fourth column, provides a BAC identifier "BAC ID NO:A" for the BAC clone referenced in the corresponding row of the table. The fifth column provides the nucleotide sequence identifier, "SEQ ID NO:B" for a fragment of the BAC clone identified in column four of the corresponding row of the table. The sixth column, "Exon From-To", provides the location (i.e., nucleotide position numbers) within the polynucleotide sequence of SEQ ID NO:B which delineate certain polynucleotides of the invention that are also exemplary members of polynucleotide sequences that encode polypeptides of the invention (e.g., polypeptides containing amino acid sequences encoded by the polynucleotide sequences delineated in column six, and fragments and variants thereof).

Table 1C

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WO 02/102994

cDNA Clone	SEQ ID	CONTIG ID:	BAC ID: A	SEQ ID	EXON
ID	NO:X			NO:B	From-To
HAGAN21	23	1026956	AC011967	1823	1-839
HAGAN21	23	1026956	AC074370	1824	1-839
HAGAN21	23	1026956	AL355151	1825	1-837
HAGAN21	23	1026956	AL121796	1826	1-836
HAGAN21	23	1026956	AC011967	1827	1-367
					372-1167
					1180-1791
					3777-4078
					4113-4269
HAGAN21	23	1026956	AC074370	1828	1-366
1					373-1167
					1180-1793
					3779-4081
1					4117-4273
HAGAN21	23	1026956	AL355151	1829	1-364
		ļ		į	373-1166
				İ	1179-1790
		ļ			3780-4082
HAGAN21	23	1026956	AL121796	1830	1-367
					374-1165
					1178-1791
			İ		3767-4069
				1	4105-4262
HAIBP89	31	727543	AC005214	1831	1-228
					817-3471

				1020	1.520
HAIBP89	31	727543	AC005214	1832	1-539
HATDM46	49	974065	AC068289	1833	
HATDM46	49	974065	AC068289	1834	1-101
HATDM46	49	974065	AC068289	1835	1-160
HBCPB32	54	1352403	AC024191	1836	1-643
1		ļ	i	ļ	1421-1636
					4917-5536
HBINS58	59	1352386	AL096774	1837	1-1023
					2010-2239
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					3153-3223
l			l		3324-3493
					3973-4126
HBINS58	59	1352386	AL096774	1838	1-341
HBINS58	59	1352386	AL096774	1839	1-142
HBOEG11	69	1300752	AL139352	1840	1-253
					438-539
					2336-2801
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					5967-6439
					9014-9452
					9829-10084
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HBOEG11	69	1300752	AL139352	1841	1-559
HCE3G69	77	728432	AC068946	1842	1-108
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	}				2448-2545
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HCE3G69	77	728432	AC068946	1843	1-191
HCE3G69	77	728432	AC068946	1844	1-686
HCEFB80	80	1143407	AL022327	1845	1-2271
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					20957-21009
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HCEWE17	84	941941	AL139130	1846	1-170
HCEWE!/	04	771771		1	463-59
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HCOOS80	95	1134974	ACUU3000	1047	1054-1158
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					4646-4749
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					5526-5669
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					5850-6176
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					7259-7398
					7531-7711
					8134-8381
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					14437-14918
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1					876-1123
}					1205-4456
		1124074	AC003688	1849	1-125
HCOOS80	95	1134974	AC003088	1049	203-480
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1		Į			2229-2323
}		ł			2725-3784
			ļ		3867-4682
		1040005	AC007459	1850	1-242
HCWGU37	104	1042325	AC022435	1851	1-218
HCWGU37	104	1042325	AC022433	1021	5587-5754
		1040305	AC022051	1852	1-294
HCWGU37	104	1042325	AC022031 AC023672	1853	1-196
HCWGU37	104	1042325		1854	1-100
HCWGU37	104	1042325	AC011101	1855	1-312
HCWGU37	104	1042325	AC034243	1633	2334-2364
		1010005	4.0010454	1856	1-218
HCWGU37	104	1042325	AC010454	1630	5588-5755
		1010005	1.000(144	1057	1-183
HCWGU37	104	1042325	AC026144	1857	
HCWGU37	104	1042325	AC009691	1858	1-292
HCWGU37	104	1042325	AL354696	1859	1-181
HCWGU37	104	1042325	AC073219	1860	1-123
HCWGU37	104	1042325	AC027414	1861	1-270
HCWGU37	104	1042325	AC010454	1862	1-303
HDPSB18	131	1043263	AL355512	1863	1-2572
				<u> </u>	3049-3871
HDPSB18	131	1043263	AC006176	1864	1-2571

T					3048-3872
HDPSB18	131	1043263	AL355512	1865	1-280
HDPWN93	141	992925	AC004590	1866	1-276
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					3820-5006
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					7076-7276
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HDPWN93	141	992925	AC021491	1867	1-275
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IIDDWAI03	141	992925	AC004590	1868	1-303
HDPWN93	141	992923	AC004370	1000	727-1252
1				1	5721-5846
HDPWN93	141	992925	AC021491	1869	1-303
Indi wives	141	7,2,2		i	727-1253
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HDTEK44	144	1025421	AC022100	1870	1-2932
HDTEK44	144	1025421	AC022100	1871	1-353
HDTFE17	146	1043391	AF196972	1872	1-74
120.1.2.1					391-524
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HDTFE17 146 1043391 AF196972 1873 1-742 HDTMK50 149 1011485 AL354768 1874 1-1346 HDTMK50 149 1011485 AC012318 1875 1-147 HDTMK50 149 1011485 AC12318 1875 1-147 HDTMK50 149 1011485 AL354768 1876 1-599 HE8QV67 158 1050076 AL133410 1877 1-765 4403-4495 836-911 8396-911 9305-948 968-910 998-1010 10202-12718 12797-1288 12974-1306 13259-1464 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 14680-1494 15625-1571 15825-1589 15965-1611 16024-1677 158 1050076 AL133410 1879 1-2 28-26 28-395 4173-483 4930-695 7105-723 7451-765 7842-794 8245-832 82599-875 8855-894 8245-832 82599-875 8855-894 9219-935 9728-986 10190-1023 1704-308 1880 1-34 704-155 1704-308 3146-416						9534-9680
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HNGBC07   368   1037631   AL022339   1923   1-158
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HPDWP28 439 1094609 AP000067 1933 1-8: 981-13: 1583-18: 2236-23' HPDWP28 439 1094609 AP000067 1934 1-1: HPJBK12 444 1011467 AC022033 1935 1-26: HPJBK12 444 1011467 AC013541 1936 1-26: HPJBK12 444 1011467 AC02033 1937 1-1: HPJBK12 444 1011467 AC013541 1938 1-1: HPJBK12 444 1011467 AC013541 1938 1-1: HPJCL22 445 1146674 AC037447 1939 1-16: 373-8: 995-13 1450-156
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HPJCL22	445	1146674	AC022400	1940	373-826
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HPJCL22	445	1146674	AC037447	1941	1-207
HPJCL22	445	1146674	AC037447	1942	1-2124
HPJCL22	445	1146674	AC022400	1943	1-207
HPJCL22	445	1146674	AC022400	1944	1-2124
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HPJEX20	447	1352420	AL080251	1945	1-1821
HPJEX20	447	1352420	AL139283	1946	1-1821
HPJEX20	447	1352420	AL080251	1947	1-313
HPJEX20	447	1352420	AL139283	1948	1-313
HPWAY46	455	1001560	AC019036	1949	1-1399
HPWAY46	455	1001560	AC067828	1950	1-1399
HPWAY46	455	1001560	AC019036	1951	1-788
HPWAY46	455	1001560	AC067828	1952	1-788
HSAUK57	467	772554	AC008860	1953	1-1344
HSAUK57	467	772554	AC025444	1954	1-1344
HSAUK57	467	772554	AC008860	1955	1-340
HSAUK57	467	772554	AC025444	1956	
HSLJG37	489	1016920	AC022608	1957	1-2406 1-53
HSLJG37	489	1016920	AC022608	1958	430-718
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HSLJG37	489	1016920	AC022608	1959	1-1365
HSODE04	491	906081	Z99289	1961	1-159
HSXEQ06	505	1016924	AL390254	1901	3226-4594
	1				5783-7254
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HSXEQ06	505	1016924	AL356017	1962	1-73
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HSXEQ06	505	1016924	AL356017	1964	1-126
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HSYAZ50	508	1027673	AC007378	1966	1-2471
HSYAZ50	508	1027673	AC073041	1967	1-2471
HSYAZ50	508	1027673	AC007378	1968	1-467
HSYAZ50	508	1027673	AC073041	1969	1-467
HTHBG43	532	919911	AL139257	1970	1-36
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HTHBG43	532	919911	AL139257	1971	1-286
HTHCA18	533	908144	AP002439	1972	1-1800
HTHCA18	533	908144	AP002505	1973	1-1776
HTHCA18	533	908144	AP002439	1974	1-110
HTHCA18	533	908144	AP002505	1975	1-110
HTJMIL75	537	1040047	AC025036	1976	1-148
HTJML75	537	1040047	AC022232	1977	1-152

HTJML75	537	1040047	AC022231	1978	1-151
HTJML75	537	1040047	AC010694	1979	1-202
HTJML75	537	1040047	AC027300	1980	1-158
HTJML75	537	1040047	AC011953	1981	1-126
HTJML75	537	1040047	AC010694	1982	1-77
HTLIV19	544	1046341	AC055750	1983	1-964
HTLIV19	544	1046341	AC027463	1984	1-964
HTLIV19	544	1046341	AC055750	1985	1-236
HTLIV19	544	1046341	AC027463	1986	1-236
HTOIZ02	553	826312	AC023146	1987	1-2101
		1			3106-3722
HTOIZ02	553	826312	AC023146	1988	1-278

Table 1D: The polynucleotides or polypeptides, or agonists or antagonists of the present invention can be used in assays to test for one or more biological activities. If these polynucleotides and polypeptides do exhibit activity in a particular assay, it is likely that these 5 - molecules may be involved in the diseases associated with the biological activity. Thus, the polynucleotides or polypeptides, or agonists or antagonists could be used to treat the associated disease.

The present invention encompasses methods of detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating a disease or disorder. In preferred embodiments, the present invention encompasses a method of treating an immune disease or disorder comprising administering to a patient in which such detection, treatment, prevention, and/or amelioration is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to detect, prevent, diagnose, prognosticate, treat, and/or ameliorate the immune disease or disorder.

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In another embodiment, the present invention also encompasses methods of detecting, preventing, diagnosing, prognosticating, treating, and/or ameliorating an immune disease or disorder; comprising administering to a patient <u>combinations</u> of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in Column 3 of Table 1D.

Table 1D provides information related to biological activities for polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof). Table 1D also provides information related to assays which may be used to test polynucleotides and polypeptides of the invention (including antibodies, agonists, and/or antagonists thereof) for the corresponding biological activities. The first column ("Gene No.") provides the gene number in the application for each clone identifier. The second column ("cDNA Clone ID:") provides the unique clone identifier for each clone as previously described and indicated in Table 1A through Table 1D. The third column ("AA SEQ ID NO:Y") indicates the Sequence Listing SEQ ID

Number for polypeptide sequences encoded by the corresponding cDNA clones (also as indicated in Tables 1A, Table 1B, and Table 2). The fourth column ("Biological Activity") indicates a biological activity corresponding to the indicated polypeptides (or polynucleotides encoding said polypeptides). The fifth column ("Exemplary Activity Assay") further describes the corresponding biological activity and also provides information pertaining to the various types of assays which may be performed to test, demonstrate, or quantify the corresponding biological activity.

Table 1D describes the use of, inter alia, FMAT technology for testing or demonstrating various biological activities. Fluorometric microvolume assay technology (FMAT) is a fluorescence-based system which provides a means to perform nonradioactive cell- and beadbased assays to detect activation of cell signal transduction pathways. This technology was designed specifically for ligand binding and immunological assays. Using this technology, fluorescent cells or beads at the bottom of the well are detected as localized areas of concentrated fluorescence using a data processing system. Unbound flurophore comprising the background signal is ignored, allowing for a wide variety of homogeneous assays. FMAT technology may be used for peptide ligand binding assays, immunofluorescence, apoptosis, cytotoxicity, and beadbased immunocapture assays. See, Miraglia S et. al., "Homogeneous cell and bead based assays for highthroughput screening using flourometric microvolume assay technology," Journal of Biomolecular Screening; 4:193-204 (1999). In particular, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides (including polypeptide fragments and variants) to activate signal transduction pathways. For example, FMAT technology may be used to test, confirm, and/or identify the ability of polypeptides to upregulate production of immunomodulatory proteins (such as, for example, interleukins, GM-CSF, Rantes, and Tumor Necrosis factors, as well as other cellular regulators (e.g. insulin)).

Table 1D also describes the use of kinase assays for testing, demonstrating, or quantifying biological activity. In this regard, the phosphorylation and de-phosphorylation of specific amino acid residues (e.g. Tyrosine, Serine, Threonine) on cell-signal transduction proteins provides a fast, reversible means for activation and de-activation of cellular signal transduction pathways. Moreover, cell signal transduction via phosphorylation/de-phosphorylation is crucial to the regulation of a wide variety of cellular processes (e.g. proliferation, differentiation, migration, apoptosis, etc.). Accordingly, kinase assays provide a powerful tool useful for testing, confirming, and/or identifying polypeptides (including polypeptide fragments and variants) that mediate cell signal transduction events via protein phosphorylation. See e.g., Forrer, P., Tamaskovic R., and Jaussi, R. "Enzyme-Linked Immunosorbent Assay for Measurement of JNK, ERK, and p38 Kinase Activities" Biol. Chem. 379(8-9): 1101-1110 (1998).

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Exemplary Activity Assay	7 8 0 2 (7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Assays for the activation of transcription through the Ar1 response centerial arc months in the activation of transcription through the Ar1 response element and activation (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(0):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
Biological Activity	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through AP1 response element in immune cells (such as Tcells).
AA SEQ NO: V	806	806
cDNA Clone ID	H2CBG48	H2CBG48
Gene No.		-

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transcription of transcription of through cAMP response element in immune cells (such as T-cells).  909 Activation of transcription through serum response element in immune cells (such as T-cells).
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invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of -Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils." Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils." J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 188:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
eosinophils).	Production of TNF alpha by dendritic cells
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				cell moliferation and functional activities.
m	H6EAB28	910	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
4	H6EDF66	911	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the AP1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.
4	H6EDF66	911	Production of IL-10 and activation of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of

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			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 210:362-368 (1992); Henthom et al., Froc Ivan Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
9	HABAG37	913	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Brzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).
	HACBD91	914	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.

		of Malic Enzyme in adipocytes	agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR response elements. ME promoter may also responds to AP1 and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in adipoccytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998); Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, I., et al., J Biol Chem, 274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1997); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays includes the H4IIE rat
HACBD91	914	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. INK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
HACBD91	914	Activation of transcription through CD28 response element in	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10

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response element are well-known in the art and may be used or rotutnely modified to assess the abouty or polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity
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include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm., Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 2013 (1913) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to functions. Exemplary assays for transcription through the NFAT response element that may be used or functions. Exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene activity (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl 66:1-10 (1998); Cullen 268 (1992); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1992); Aramburu et al., Biochem 268 (1	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 Malm, Methods in Enzymol 216:362-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1998); henson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer.
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immune cells (such as T-cells).	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).
	914	914
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				cell line with cytolytic and cytotoxic activity.
∞	HACCI17	915	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
ω	HACCI17	915	Production of IL-8 by immune cells (such as the human EOL-1 eosinophil cells)	Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human eosinophil cell line) are well known in the art (for example, measurement of IL-8 production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. IL8 is a strong immunomodulator and may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).
ω	HACCI17	915	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Nati Acad Sci USA 85:6342-6346

				antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3. CD4, or CD8. These cells mediate humoral or cell-mediated
ω _.	HACCI17	915	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-I expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
∞	HACCI17	915	Production of IL-8 by by endothelial cells (such as Human Umbilical Cord Endothelial Cells).	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human umbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.
∞	HACCI17	915	Production of ICAM in endothelial cells (such as	Endothelial cells, which are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used in ICAM production assays include human umbilical vein endothelial cells (HUVEC), and are available from commercial sources. The expression of ICAM

(CD54),a intergral membrane protein, can be upregulated by cytokines or other factors, and IC-AW expression is important in mediating immune and endothelial cell interactions leading to immune and inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirely.	Assays for the activation of transcription through the API response element are known in the activation of transcription through the API response element are known in the arrange be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies) and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HTZ cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4.	RANTES FMAT. Assays for immunomodulatory proteins that induce cremotaxis of a constitution and eosinophils are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as RANTES, and the induction of chemotactic responses in immune cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., Janibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000): Cocchi et al., Science 270(5243):1811-1815 (1995); and Robinson et al., Clin Exp Immunol 101(3):398-407 (1995), the contents of each of which are herein incorporated by reference in its entirety. Human immune cells that may be used according to these assays may be isolated using
human umbilical vein endothelial cells (HUVEC))	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Production of RANTES
	916	917
	HADA089	HADCP14
	O	10

				techniques disclosed herein or otherwise known in the art.
Ξ	HAGA185		Production of IFN gamma using Natural Killer cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2; promotes IgG2a and inhibits IgE; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Natural Killer (NK) cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fe receptors, leading to cell-mediated cytotoxicity.
=	HAGAI85	816	Production of GM-CSF	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160

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(2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.  Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic important component of allergic disease.	disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used of coutinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention factors and modulate gene expression involved in a wide variety of cell regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
Regulation of apoptosis of immune cells cells).		Activation of transcription through GAS response element in immune cells (such as Tcells).
616		920
HAGAM64		HAGAN21
12		13

		(such as T-cells).	at., Octic 00.1710 (1979), Carlo 2014 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension of T cells with extooxic activity.
HAHDB16	925	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
нанрв 16	925	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Assays for the activation of transcription through the cAMP response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety.

				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
	<b>НАН</b> DВ 16	925	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays that may be used or routinely modified to test antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4: 193-204 (1999); Rowland et al., "Lymphocytes; a practical approach" Chapter 6: 138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Bliliau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
19	нанрк32	926	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are

herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOL14, that may be used according to these assays are publicly available (e.g., through the ATCC).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote caspase protease-mediated apoptosis. Induction of apoptosis in antagonists of the invention to promote caspase protease-mediated apoptosis. Induction of apoptosis in tumor blood supply. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary endothelial cells that may be used according to these assays include bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.		
	Endothelial Cell Apoptosis	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Activation of transcription through
	927	927	726
	HABO71	навол	HAIBO71
	20	20	50

l or ng nae nae Natl st al., in in g to	nitors CCSF ttory nely of y nud ation of day and and nor toxic	and
functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and extotoxic activity.	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or fleukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirery. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for
functions. Exemplary assays for transcription through the NFAT response element that may be us routinely modified to test NFAT-response element activity of polypeptides of the invention (incluss antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., P66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Pro Acad Sci USA 85:6342-6346 (1988); Aramburu et al., 1 Exp Med 182(3):801-810 (1995); De Bos Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (15 and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are he incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic acvitoxic activity.	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progrand enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, Gb plays an important role in the differentiation of dendritic cells and monocytes, and increases antig presentation. GM-CSF is considered to be a proinfiammatory cytokine. Assays for immunomobing proteins that promote the production of GM-CSF are well known in the art and may be used or rounding to assess the ability of polypeptides of the invention (including antibodies and agonists of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routin modified to test immunomodulatory activity of polypeptides of the invention (including antibodic agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolea (2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these a are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed her otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cy activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxic	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for
IFAT respon of polypeptic and assays d 5:362-368 (1 b) Med 182(3 al., Eur J In the conten be used accoman NK cell natural kille	s, macropha tion of grant es and macrells and monor ry cytokine. nown in the nown in the and modula latory protei Such assays as of the inve disclosed in s: a practical nents of eac stat may be solated using rge granular endent killii	s system and its TH2 diffe increases M
rough the Nent activity of entition included included included in et al., J Expl. Fraser et [4293 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993) (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (1993 (19	ivated T cell and prolifera ils, monocyt dendritic cel oinflammac oinflammac onodulation onodulation of T cells. ? polypeptide c the assays. ymphocytes -233, the col al killer cells or may be i or may be i cells are la tibody-indeg K Fc recepti	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a an inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for
unscription the sponse elements of the involved the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved to the involved t	essed by act erentiation a in neutroph entiation of d to be a pro properties of sypeptides of liate immun nat test for in nat test for in a ectivation y activity of tion) include and et al., "I 1 (58(2):22.5 irety. Natura o the ATCC) a the ATCC)	entral role in romotes TH rophage acti
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Exemplary a codified to the and agonists and agonists (2018). Cullen SA 85:6342 am Cell Biolone et al., J Biod d by referen aliable (e.g., a include the ctivity.	MAT. GM GM-CSF r es antimicro es antimicro es antimicro pportant role n. GM-CSF at promote til a sassess the a sassess the is of the inverse. Exempl such as GM inverse antagonists antagonists antagonists antagonists antagonist y available ( y available ( onown in the onown in the only antibody bot	n FMAT. IFI natory cytok 3 secretion;
functions. Exemptoulinely modified antibodies and ago 66:1-10 (1998); Cl Acad Sci USA 85: Int J Biochem Cell and Yeseen et al., incorporated by republicly available these assays inclu cytotoxic activity.	GM-CSF F fibroblasts. and enhanc plays an impresentation proteins that modified to antagonists of leukocyt cytokines, imodified to agonists or Screening (2000); and incorporate are publicit otherwise bactivity but recognize a	IFNgamma proinflamn inhibits Igl
response element in immune cells (such as natural killer cells).	Production of GM-CSF	Production of IFNgamma using a T
respo eleme immu (such naturi cells)	928 GA	928 Pr
	HAIBP89	HAIBP89
	H	HA
	7	21

			Signalling Pathway	assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
55	HAICP19	929	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.
53	HAICP19	929	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Tumer et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein

FL18		transcription the art and may be used or routinely modified to assess the ability of polypeptides of the invention through through in many cell types. Exemplary assays for transcription tersponse response in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or immune cells many cell types. Exemplary assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	931 Regulation of Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely another in modified to assess the ability of notymentides of the invention (including antibodies and agonists or
	IFNgamma using a T cells		
		HAIFLI8 93	HAJAF57 93

Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (IVFA1) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Proc Natl 66:1-10 (1998), Cullen and Malm, Methods in Bnzymol 216:362-368 (1992); Henthom et al., Proc Natl 66:1-10 (1998), and Yeseen cell Biol 31(10):121-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of T-cells. Exemplary assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science; 282: 2251-2263 (1998), and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
	Activation of transcription through NFAT response element in immune cells (such as Tcells).	Production of IL-13 and activation of T-cells.
	933	934
	HAJBZ75	НАМЕС93
	26	27

78	HAMFK58	935	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al., FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells farmather.
59	HAPNY86	936	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
30	HAPPW30	937	Activation of T-Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells

32	HASAV70	939	Activation of	techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.  Assays for the activation of transcription through the cAMP response element are well-known in the art
}			transcription through cAMP response element in immune cells (such as T- cells).	and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
32	HASAV70	939	Production of MIP lalpha	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
33	HASCG84	940	Production of	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that

upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein I alpha (MIP-Ia), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	
MIP lalpha	Production of IL-6
	940
	HASCG84
	33.3

				cell proliferation and functional activities.
72	HATACS	170	Production of	GM_CNF FMAT GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and
			GM-CSF	fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory
				proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of
· · · · · ·				eytokines, such as Civi-Cost, and the activation of 1 cens. Such assess that may be used a common modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and modified to test immunomodulatory activity of polypeptides of the invention (including antibodies).
				agonists or antagonists of the invention) include the assays disclosed in prinagula of al., J Diomochana. Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein
				incorporated by reference in its entirety. Institutal killer cells that they be used according to these assays are nublicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or
				otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic
				activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also
				recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
35	HATBR65	942	Production of	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
···-			[[-6	induced lgE production and increases igA production (igA plays a role in mucosai innumuity). Lt-o induces cytotoxic T cells. Deregulated expression of Lt-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J

		Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
	, i	techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting reclaims ususpension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
	Regulation of A transcription of Malic a adipocytes p a dipocytes p a dipocytes p p a dipocytes p p p p p p p p p p p p p p p p p p p	Assays for the regulation and transcription of Malic Enzyme are well-known in the art and may be used or Assays for the regulation of transcription of Malic Enzyme well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR response elements. ME promoter may also responds to AP1 and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in adipocoytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998); Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, I., et al., J Biol Chem, 274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1997); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays includes the H4IIE rat liver hepatoma cell line.
1 .	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
	Production of	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4

			П-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activities. Such assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., I Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T real proliferation and functional activities.
37	HATCP77	944	Upregulation of CD71 and activation of T cells	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to

				immunomodulatory tactors.
% %	HATDF29	945	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of 1-cells are well known in the art and near or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "Th-leper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL.10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL.10, IL.13, IL.5 and IL.6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
39	HATDM46	946	Production of LL-8 by by endothelial cells (such as Human . Umbilical Cord Endothelial Cells).	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human umbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in recruitment and activation of immune cells such as neutrophilis, macrophages, and lymphocytes.
39	HATDM46	946	Upregulation of CD69 and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated 1 cells, B cells, and NN cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory

				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
				Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that man be used consequently that man are herein incorporated union teaching to these nearest man be included union teaching as the second teaching to the second nearest man be included union teaching the second teaching to the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are the second nearest man are t
				that may be used according to ursec assays may be isolated using continuous unstrosted including otherwise known in the art. Human I cells are primary human lymphocytes that mature in the thymus
				and express a 1 Cell receptor and CD3, CD4, or CD8. These cells mediate numoral of cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
40	HATEE46	947	Activation of Endothelial	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the
			Cell p38 or JNK	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38
			Signaling	kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of
			Fathway.	polypeptides of the invention (including antibodies and agonists of antigonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res
				247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature
				410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of
	•			each of which are never are analysisted by feleterines in his churchy. Enfounding tells that his be used account to these accounts are mishich, available (e.g., through the ATC). Exemplant endothelial cells
				accoloning to mese assays are projectly available (e.g., unough the ATCC). Exempliary curventant cans that may be used according to these assays include human umbilical vein endothelial cells (HUVEC),
			-	which are endothelial cells which line venous blood vessels, and are involved in functions that include,
Ş	114 TOTA 40	27.7	9	but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
<del>}</del>	HAI EE40	\$	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used of routinery modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J,
				15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of
				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
41	HBAF133	948	Activation of	Activation of Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or

b to se activity ne disclosed 504 504 5:37-40 : which are these sy are cover, f the and/or or of c-Jun correction or of c-Jun sy are cover, f the and/or or of c-Jun correction or of c-Jun correction or of c-Jun correction	cell he art and ling anintain T est for cast for and the latory le
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apoptosis are well known in the art and may be used or routinely modified to assess the abulity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-110 (1999); Chang and Karin, Nature 410(6824):37-40 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used or or which are recruited to tissues and mediate the inflammatory response of late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reactions. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophilis include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspasses in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophilis" Lib Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3) Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation" J Allergy Clin Immunol; Sep;104(3) Pt 1):675-74; and, Sousa AR, et al., "In vivo resistance in its entirely.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated 1 cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-
apoptosis are w polypeptides of promote or inh that may be use invention (incl) in Forrer et al., (1999); Kyriak (2001); and Co herein incorpo assays include recruited to tiss exemplary assi invention (incl transduction, c cited in: Zhang NHZ-terminal Immunol; Oct; oxide in eosing Pt 1):565-74; a associated with inhibit JUN N.	CD152 FMAT negative regulhyperproliferal immunorespor homeostasis at may be used of antibodies and cell homeostas immunomodul activation of Tactivity of polinvention) inclinvention) inclinegative regularized.
Signaling Pathway in immune cells (such as eosinophils).	Upregulation of CD152 and activation of T cells
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				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
42	HBAFV19	949	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reaction. Moreover, exemplary assays and mediate the inflammatory response of late stage of allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of culted in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by intric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); he contents of prednistion of JUN N-terminal kinase phosphorylation of JUN N-terminal sin is as promethal as a promethal as a pro
42	HBAFV19	949	Upregulation of CD152 and	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired

			activation of T cells	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance	
43 HBA	HBAMB34	950	Upregulation of CD71 and activation of T cells	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	<del></del>

CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomoulalatory factors.	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a
Upregulation of CD69 and activation of T cells	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Production of
050	951	952
HBAMB34	HBCPB32	HBHAD12
43	4	45

			IFNoamma	proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and
			using a T	inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for
			cells	immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory
				activities and minute 1 nz heigher cent functions are well another in the me may be used in the modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate
				TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
				for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg.),
				and the activation of T cells. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agonists of
				antagonists of the invention) include the assays disclosed in Miragua et al., J biomolecular Scienning
				4:135-204 (1333), AUMINING CI al., Lympholytics: a practical approach Camping City 201 (201), Camping City 1 1 City 1 sh Anal 8/5/2022 (1998);
				Rochm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
				the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
				preactivated to enhance responsiveness to immunomodulatory factors.
46	HBHMA23	953	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
			TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
		_		Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
		_		in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
_				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting

				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
47	HB IB W 67	954	Production of IL-5	LL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immunomodulatory proteins evaluate the production of cytokines, such as LL-5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
& &	HBIMB51	955	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal

				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun
				NH2-terminal kinase and p38 mitogen-activated protein kinase in numan cosmophins. Can Exp. Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
_				inhibit JUN N-terminal kinase phosphorylation. J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999);
				the contents of each of which are herein incorporated by reference in its entirety.
49	HBINS58	926	Production of TNF alpha by	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cens, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
1				immunomodulatory proteins evaluate the production of cytokines such as tunion increase again argued of the indicate and the indicate and indicate and the indicate and the indicate argued the indicate and the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued the indicate argued th
				[INFB], and the induction of influence of an influence of converse tesperations. Occur accept the contract of the invention
				be used of routinely invalined to test maintainmountainly activity of polypopuses of the invalidation of the invention) include assays disclosed in Miraglia et
				al Riemolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
49	HBINS58	926	Insulin	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely
			Secretion	modified to assess the ability of polypeptides of the invention (including antibodies and agoinsts of
				antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
				FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
	•			glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
				Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
				pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Shimizu, H., et al., Endocr J. 41(3):261-9 (2000); Salabatek,

A.M., et al., Moi Endocrinol, 13(8):1303-17 (1999); Filipsson, K., et al., Ann N. Y. Acad Sci, 805:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening 4:103-204 (1990), the contents of each of which is barain incorporated by
reference in its entirety. Parcreatic cells that may be used according to these assays are publicly
available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line
established from Syrian hamster islet cells transformed with SV40. These cells express glucagon,
somatostatun, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucase and glucased by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs. Lord and
Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
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Fallway Exemplary assays for EKK kinase activity that may be used or routinely modified to test ERK kinase-
induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
Manchinal Daniel V E. Cil. E. J. Cil. 11 Cit et al., Diol Cieff 37(6-2), 1101-1110 (1796), 12
National Division 1, Exp Clin Endocrinol Diabetes 10/(2):120-132 (1999); Kynakis JM, Blochem Soc Symme 64:30.48 (1999); Rynakis JM, Blochem Soc
Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in
its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available
(e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays
include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain
of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like
Production of IL-6 FMAT. II-6 is produced by T cells and has strong effects on B cells. II-6 narticipates in II-4
induces cytotoxic T cells. Deregulated expression of IL 6 has been linked to autoimmune disease,
plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
differentiation factor proteins produced by a large variety of cells where the expression level is strongly
regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
routinely modified to assess the ability of polypeptides of the invention (including antibodies and
agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the

				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
		-		differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists differentiation activity of polypeptides of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999).
				Rowland et al., "Lymphocytes: a practical approach Chapter 0.130-100 (2000), and the following Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its Immunol 158:2919-2940 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used accounting to utest assays may be resembled techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
51.	HBJID05	958	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used of routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypepules
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
		-		Cohn, et al., "I-helper type 2 cell-directed inerapy for asimilar finantiacology or anotapounce; our construction of social of surplice harding in their entirety.
				196 (2000); the contents of each of which are incentionally of the properties of the content of the French are related from The French are related to these assays include The cells. IL 10 secreted from The
	•			cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
				ILA, IL10, IL13, ILS and IL6. Factors that induce differentiation and activation of Th2 cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
	001	950	3	Isolated from cord blood.  TATE. ENAT. Account for imminimedulatory proteins produced by activated macrophages, T cells,
25	HBJIY92	606	Froduction of	the riviral second muscle and other cell types that exert a wide variety of inflammatory and cytotoxic
		- <del>V</del>	dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
		-	cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) include assays disclosed in validation

			al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 161(7):3485-3493 (1998); Verhasselt et al., Timmunol 168:2919-2955 (1997); and Nardelli et	
			al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting	
			cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	
HBJIY92	656	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6	
			induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,	
			plasmacytomas, myelomas, and chronic hyperproliterative diseases. Assays tor immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly	
			regulated by cytokines, growth factors, and hormones are well known in the art and may be used or	
			routinely modified to assess the ability of polypeptides of the invention (including antibodies and	
			agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate. T cell proliferation and function. Exemplary assavs that test for immunomodulatory proteins evaluate the	
			production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and	
			functional activities. Such assays that may be used or routinely modified to test immunomodulatory and	
			differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists	
			of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);	
			Kowiand et al., Lympnocytes: a practical approach. Chapter 6:136-100 (2000); and Verhasselt et al., J. Immunol 158:2919-2925 (1997), the contents of each of which are herein incomorated by reference in its	
			entirety. Human dendritic cells that may be used according to these assays may be isolated using	
			techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting	
			cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T	
			cell proliferation and functional activities.	$\neg$
HBJJU28	096	Production of	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or	
		L-13 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and	
		activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of	
		T-cells.	T-cells. Exemplary assays for L-13 production that may be used or routinely modified to test activity of	
			polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include,	
			for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13	_
			independently of IL-4 in Experimental asthma" Science; 282: 2261-2263 (1998), and Wills-Karp M, et al.,	

s of used used to the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer of the transfer	tt troity trivity trivity ) ) ) be herent th clonal	the art ding iption ble, a way. E ary ed to gonists allen 5:6342-
3); the conten is that may be stimulus for r s of T cells th tion of Th2 c T helper 2 c Iymphocytes	ansduction the used or roution and agonists and agonists asse-induced a fethe invention (koulina et al., 9), the content cells that manylary mous [73-L1 is an an reloped throus differentiation.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-
58-2261 (1999) Scemplary cel Scentiar a potent ells are a class ion and activa ma. Primary ipheral blood	inase signal tr tr and may be ng antibodies and cell sur- or test PI3 kin antagonists o 10 (1998); Ni 62-166 (199 Use adipocyte ATCC). Exv 3-L1 cells. 3: blast cells dev r appropriate	element are v tides of the ir MP, regulate of cell function the the cAMP lation into adi 3 binding prof be used or ro (including an il., Gene 66:1
nce; 282: 22. ir entirety. I type cytokin thma. Th2 c e differentiat ergy and ast ons using per	tys, for PI3 k town in the a tion (includi tion (includi ty modified t d agonists or d agonists or d b-9):1101-11 etes 48(8):16 entirety. Mo on tirty. Mo on tirty. Mo on to 373 fibro version unde	MP response ty of polyper ty of polyper ty of polyper o increase cA wide variety ors that active d in different CRB (CRJ nent that may the invention in Berger et all enthorn et all.
asthma" Scie erence in the IL13, a Th2 d allergic ast ors that induc genesis of all	n GSK-3 assa al are well-kr is of the inver- nhibit glucos ed or routine intibodies an intibodies an in Chem 379(? er et al., Diab ference in its available (e. ga ous substrain pose-like cor	seass the cAl seass the abili is invention) to nvolved in a videntify factor identify factor in involve in a videntify factor or sponse elent speptides of the factor ypeptides of the factor in the factor in the factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor factor f
or of allergic orated by ref le Th2 cells. nsiveness an d IL6. Fact on and patho der Th2 pola	or example a de cell surviv f polypeptide promote or i pat may be us n (including a ter et al., Bio i; and Schrey, or and Schrey are publicly a de according at is a continuous pocyte to adi	nscription thu nodified to as gonists of the on of genes in of genes in the beginning of the transcriptogenesis, a for the transcriptogenesis on the cAMP of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying of polying
intral mediate herein incorp assays includy hyper-respo IL 13, IL 5 and in the initiation of culture under the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of t	ase assays, fretabolism an the ability of invention) to invention) to ase activity the invention the invention and invention free in froof these assays at may be use te cell line the rgo a pre-adi in the art.	r routinely in prists or anta anta atta expression role in adjustice through the invention, he invention, desin Enzymeter at an element at the invention, desin Enzymeter requirements and attachments and attachments and attachments and an Enzyments and an Enzyments and an Enzyments and an Enzyments and an Enzyments and an Enzyments and an Enzyments
"Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Kinase assay. Kinase assays, for example an GSK-3 assays, for PI3 kinase signal transduction that regulate glucose metabolism and cell survival are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Bio Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342.
"Inte each accon prod secre play gene from	Kina regul modi antaga assay of pc inclu Diab each adipo mount isola cond cond	Assa and antitifactor 3T3- CRE continassa test or an
	Activation of Adipocyte P13 Kinase Signalling Pathway	Activation of transcription through cAMP response element (CRE) in preadipocytes.
	961	961
	HBJLC01	HBJLC01
	54	42

WO 02/102994 PCT/US02/08278

				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
45	HBJLC01	196	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
54	HBJLC01	961	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., is Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its

				entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
54	нвл.со!	961	Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element in immune cells (such as in the human HMC-1 mast cell line) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Sherman, Immunol Rev 179:48-56 (2001); Malaviya and Uckun, J Immunol 168:421-426 (2002); Masuda et al., J Biol Chem 275(38):29331-29337 (2000); and Masuda et al., J Biol Chem 276:26107-26113 (2001), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
\$	HBJLF01	962	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
55	HBJLF01	962	Production of	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely

WO 02/102994 PCT/US02/08278

			VCAM in	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			endothelial cells (such as	antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expresssion in endothelial cells. Endothelial cells are cells that
			human	line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis,
			umbilical	vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilityal vein endothelial cells (HIIVEC) which
			endothelial	are available from commercial sources. The expression of VCAM (CD106), a membrane-associated
			cells	protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of
			(HUVEC))	lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role
	9711 11 111	6,50		in promoting immune and inflammatory responses.
26	HBJLH40	963	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
	•		transcription	(STAT6) response element are well-known in the art and may be used or routinely modified to assess the
			through	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			STAT6	to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	test STAT6 response element activity of the polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998);
			(such as T-	Cullen and Malm, Methods in Bnzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA
			cells).	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
				69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol
				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which
				is a suspension culture of IL-2 and IL-4 responsive T cells.
57	HBJNC59	964	Activation of	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation,
-			T-Cell p38 or	activation, or apoptosis are well known in the art and may be used or routinely modified to assess the
			JNK	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			Signaling	to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays
			Pathway.	for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-
				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et
				al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and
				Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999);
				the contents of each of which are herein incorporated by reference in its entirety. T cells that may be

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used according to these assays are publicly available (e.g., through the ALCC). Exemplary mouse 1 cens that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.  Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in	the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring secretion of insulin are well-known in the art and may be used of routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J., 47(3):Z61-9 (2000); Salapatek, invention) include assays disclosed in: Shimizu, H., et al., Endocr J., 47(3):Z61-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem. 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell funcation be used according to somatostatin or glucocorticoids. ATTC# (REI. Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
Activation of	transcription through serum response element in immune cells (such as T- cells).	Secretion Secretion	Upregulation
		965	996
HBNAW17		HBNAW17	HBOEG11
28	3	88	59

WO 02/102994 PCT/US02/08278

line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Endothelial cells, which are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used in ICAM production assays include human umbilical vein endothelial cells (HUVEC), and are available from commercial sources. The expression of ICAM (CD54), a intergral membrane protein, can be upregulated by cytokines or other factors, and ICAM expression is important in mediating immune and endothelial cell interactions leading to immune and inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000), Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
transcription through GATA-3 response element in immune cells (such as mast cells).	Production of ICAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Production of IL-10 and activation of T-cells.
	. 696	696
	HCACU58	HCACU58
	62	62

production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187- 196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete II.4, IL.10, IL.13, IL.5 and IL.6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	effector cells. Assays for immunomodulatory proteins secreted by TH1 cells that promote T cell and NK cell growth and differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory promote immune cell growth and differentiation, and/or invention) to mediate immunomodulator, promote immune cell growth and differentiation, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as L2, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Laduda et al., Immunology 94(4):496-502 (1998); and Powell et al., Immunol Rev 165:287-300 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomous actors.	Production of IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
	HCACV51	HCDBW86
	89	2

antagonists of the invention (including antibodies and agonists or antagonist of the invention) include the assays disclosed in Mariguis et al., 13 Biomocloular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000). Obstima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 12(8):2413-2416 (1995); Mori et al., A J Allergy Chin Immunol 104 (19.25); Aug et al., Eur J Immunol 12(8):2413-2416 (1995); Mori et al., A J Allergy Chin Immunol 104 (19.25); Aug et al., Eur J Immunol 12(8):2413-2416 (1995); Mori et al., A J Allergy Chin Immunol 104 (19.25); Aug et al., Eur J Immunol 12(8):2413-2416 (1995); Mori et al., A J Allergy Chin Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992); Aug et al., Eur J Immunol 104 (1992);
HCE1Q HCE2F

the PEPCK promoter that may be used or routinelly modified to test for PEPCK promoter activity (in hepatocytes) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in invention) include assays disclosed in Berger et al., Foro Natl Acad Sci USA 85:6342-6346 (1988); Lochhead Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Lochhead et al., Diabetes 49(6):896-903 (2000); and Yeagley et al., J Biol Chem 275(23):17814-17820 (2000), the et al., Diabetes 49(6):896-903 (2000); and Yeagley et al., J Biol Chem 275(23):17814-17820 (2000), the contents of each of which is herein incorporated by reference in its entirety. Hepatocyte cells that may be used according to these assays include H4lle generated. Exemplary liver hepatoma cells that may be used according to these assays include H4lle cells, which contain a tyrosine amino transferase that is inducible with glucocorticoids, insulin, or cAMP	Assays for the activation of transcription through the NFKB response element are well-known in the art Assays for the activation of transcription through the ability of polypeptides of the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of epithhelial genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Kaltschmidt B. et al., Oncogene, 18(21):3213-3225 (1999); Beetz A, et al., Int J assays disclosed in: Kaltschmidt B, et al., Oncogene, 18(21):3213-3225 (1999); Beetz A, et al., Int J Brajmol 216:362-368 (1992); Henthorn et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Epithelial cells that may be used according to these assays are publicly available the HELA cell line.	
promoter in hepatocytes	Activation of transcription through NFKB response element in epithelial cells (such as HELA cells).	Activation of transcription through NFKB response element in immune cells (such as the U937 human monocyte
	973	973
	HCE2F54	HCE2F54
	99	99

			cell line).	are herein incorporated by reference in its entirety. Monocytic cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human monocyte cells that may be used according to these assays include the U937 cell line, which is cell line derived by Sundstrom and Nilsson in 1974 from malignant cells obtained from the pleural effusion of a patient with histiocytic lymphoma.
29	HCE3G69	974	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
<i>L</i> 9	HCE3G69	974	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 0 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are

generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or Assays for production of IL-10 and activation of T-cells are undified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of agonists or antagonists of the invention of polypeptides T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 and antibodies of the invention include, for example, assays such as disclosed and/or cited in: production and/or T-cell proliferation include, for asthma "Pharmacology & Therapeutics; 88: 187-Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Th2 cells in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 (L 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells are major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are included from cord blood.  Exemplary cells from cord blood.  The factor Activation of Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Assays for the activation of transcription through the Cannna Interferon Activation of transcription through the Cannna Interferon Activation of transcription factors) involved in a wide variety of element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention) to modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell modified to test GAS-response element activity of polypeptides of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in: invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in: Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992); Mayumi M., "EoL-1, a human peripheral blood eosinophils" Am J Respir Cell Mol Biol: and induce CIS1 mRNA in human peripheral blood eosinophils" Am J Respir Cell Mol Biol: Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in
	Production of IL-10 and activation of T-cells.	Activation of transcription through GAS response element in immune cells (such as eosinophils).
	975	976
	HCEEA88	HCEFB69
	89	69

			•	eosinophils." J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are a type of immune cell important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation, normally a direct consequence of interleukin or other cytokine receptor stimulation (e.g. IL3, IL5 or GMCSF).
69	НСЕГВ 69	976	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL-10, IL-13, IL-5 and IL-6. Factors that induce differentiation and activation of Th2 cells are major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are isolated from cord blood.
70	HCEFB80	977	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (CAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these

			assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
<b>НСЕГВ</b> 80	977	Insulin Secretion	Assays for measuring secretion of insulin are well-known in the art and inay be used of contracts modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by EMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic by component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# Refs. Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
HCEGR33	978	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used of routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
нсемР62	979	Activation of transcription through NFKB response element in	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of epithhelial genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include

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			epithelial cells (such as HELA cells).	assays disclosed in: Kaltschmidt B, et al., Oncogene, 10(21):3213-3223 (1393), Dect. A, et al., Lift Radiat Biol, 76(11):1443-1453 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle
				Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by
				reference in its entirety. Epithelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary epithelial cells that may be used according to these assays include the HELA cell line.
72	HCEMP62	676	Activation of	This assay uses a NFKB response element (which will bind NFKB transcription factors) linked to a
			transcription	reporter gene to measure NFKB mediated transcription in the human monocyte cell line U937. NFKB is
			through NFKB	upregulated by cytokines and outer factors and in the element activation reads to expression of immunomodulatory genes. Activation of NFKB in monocytes can play a role in immune responses.
			response	Exemplary assays for transcription through the NFKB response element that may be used or rountinely
			element in	modified to test NFKB-response element activity of polypeptides of the invention (including antibodies
			immune cells	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 00:1-10
			(such as the	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Nau Acad Sci 118 A 85.5242 5246 (1988): Valle Blazanez et al. Imminology 90(3):455460 (1997): Arambiran et al., J
			monocyte	USA 83:0342-0340 (1708), Valle Diazquez et al., 29(3):838-844 (1999), the contents of each of which
			cell line)	are herein incorporated by reference in its entirety. Monocytic cells that may be used according to these
			`	assays are publicly available (e.g., through the ATCC). Exemplary human monocyte cells that may be
				used according to these assays include the U937 cell line, which is cell line derived by Sundstrom and
				Nilsson in 1974 from malignant cells obtained from the pleural effusion of a patient with histiocytic
73	HCENK38	086	Protection	Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the art and may be
}			from	used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies
			Endothelial	and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary
			Cell	assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis rescue of
			Apoptosis.	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
				the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J
				Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each
				of which are herein incorporated by reference in its entirety. Endothelial cells that may be used
				according to these assays are publicly available (e.g., through commercial sources). Exemplary
_				endothelial cells that may be used according to these assays include bovine aortic endothelial cells
				(bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions

				that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
73	HCENK38	086	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
73	HCENK38	086	Activation of Hepatocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Rat liver hepatoma cells that may be used according to these assays include H4lle cells, which are known to respond to glucocorticoids, insulin, or cAMP derivatives.
73	HCENK38	086	Upregulation of CD71 and activation of T cells	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for

				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the
				activation of 1 cents. Such assays that hay be used of fournest incention of the invention activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra
				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
				cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
74	HCEWE17	981	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of nolyneptides of the invention (including antibodies and agonists or
				antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J,
				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary cells that may be used according to these assays include microvascular endothelial cells
75	HCEWE20	982	Regulation of	Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or
) -		ļ	transcription	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			of Malic	agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in
			Enzyme in	lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME
			hepatocytes	promoter contains two direct repeat (DR1)- like elements, integrand inclinitied as putative 11 AN
				assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in
				hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the
_				invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998);
				Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, I., et al., J Biol Chem,
				274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1997); Berger, et
-				al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents
				of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used
				according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely

generated. Exemplary hepatocytes that may be used according to these assays includes the mouse 3T3-L1 cell line. 3T3-L1 is a mouse preadipocyte cell line (adherent). It is a continuous substrain of 3T3 fibroblasts developed through clonal isolation. Cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.	invention (including antibodies and agonists invention (including antibodies and agonists pression. Exemplary assays that may be use include assays disclosed in: Rolfe BE, et al., A Jr, et al., J Immunol, 154(5):2358-2365 (1 Mol Physiol, 278(6):L1154-L1163 (2000), t reference in its entirety. Cells that may be u reference in the ATCC) and/or may be routine ding to these assays include Aortic Smooth in the ATCC.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated 1 cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+T cells are well known in the art and homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-104 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
	Production of ICAM-1	Upregulation of CD152 and activation of T cells
	982	983
	HCEWE20	HCFCU88
	75	76

72	HCFMV71	984	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4
77	HCFMV71	984	Activation of transcription through cAMP response element in immune cells (such as Teells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, bind to CREB transcription factor, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
77	HCFMV71	984	Activation of transcription through GAS response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl

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Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).  Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the MFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., The for Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may	be used according to these assays are publicly available (e.g., through the ATCC).  Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
Activation of transcription through NFKB response element in immune cells (such as Teells).	Activation of transcription through serum response element in immune cells (such as T-cells).	Upregulation of HLA-DR and activation of T cells
984	985	986
HCFMV71	HCFNN01	HCFOM18
77	78	79

				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known
0,5	UCEON(18	780	Targettle	in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
			of CD71 and activation of T cells	Assays for immunomodulatory proteins expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
79	HCFOM18	986	Upregulation of CD69.and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and aponists or antagonists of the invention) to modulate the activation of

				T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193- invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Signal Fur I Imminol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460
				(1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells (1993), the contents of each of which are herein incorporated using techniques disclosed herein or
				that may be used according to mese assays may be used any human lymphocytes that mature in the thymus otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
				and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate number of centilication immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
92	HCFOM18	986	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
`			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of Color and read to imperior
			activation of	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of 1 cells, maintain 1
				cell homeostasis, and/or mediate numoral of cell-inculated minimum; Exemplical most of cell the commenced in the more controlled the controlled of cell surface markers, such as CD152, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miragila et al., 3 Distinction of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the c
				204 (1999); Rowland et al., Lympnocytes: a practical approach. Charles of 2013 (2013):294-300 (1999);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
,				incorporated by reference in its entirety. Human T cells that may be used according to these assays may
				be isolated using techniques disclosed herein or otherwise known in tile att. Timinain 1 cens are princed.
				human lymphocytes that mature in the thymus and express a 1 Cell receptor and CD3, CD4, or CD6.
				These cells mediate numoral of cell-lifediated infiniting and may be proceed as the contract of the cells mediated and infinity and may be proceed as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the cells mediated as the
				responsiveness to immunomodulatory lactors.
80	HCHINF25	987	Calcium flux	Assays for measuring calcium flux are well-knowll lil uic attain may or used of formers)

			in immune cells (such as monocytes)	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions.
				Exemplary assays that may be used of routinely mounted to measure calcium that in minimic cens (such as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther, 269(3):891-896 (1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 74(2)
				589-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays
				are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the THP-1 monocyte cell line.
81	HCMSQ56	886	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			• • • •	antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of
_				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the A1CC) and of may be fourtiefy generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells
				(MVEC).
82	HCMST14	686	Production of	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
			٩	induced igE production and increases igA production (igA plays a role in induced minimum). E. o induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used of
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
	•			functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J

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Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T	Upregulation  CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to haperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired activation of hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and nativodices and agonists or antagonists of the invention) to modulate the activation of T cells. Such assays that may be used or routinely modified to assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-11. Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saior T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Regulation of Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely apoptosis of modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al.,
	066	991
	HCMTB45	HCNSD93
		8

				J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
85	HCOOS80	992	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and cytotoxic activity.
98	недстоя	993	Upregulation of HLA-DR and activation of T cells	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1999);

and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Gamma Interferon Activation Site (UAA) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of runcions. Exemplary assays for transcription through the GAS response element that may be used or functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Broc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1880-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention of immune cells include assays disclosed and/or cited in: Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992); Marticatory of polypeptides of the invention of immune cells include assays disclosed and/or cited in: morporated by reference in its entirety. Exemplary colls that may be used according to these assays include eosinophils. J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein eosinophils are a type of immune cells important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammtory response of late stage of allergic reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation. GMCSF).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary and agonists or transcription through the AP1 response element that may be used or routinely modified to test
	Activation of transcription through GAS response element in immune cells (such as eosinophils).	Activation of transcription through AP1 response
	994	994
	HCUBS50	HCUBS50
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AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4.	Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis rescue of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary endothelial cells that may be used according to these assays include bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6: 138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety.
AP1-rantage Malm (1988 (1988) which these according the thine the	Caspa used (and a) assay polyp the as Pharn of wh accorrendot (bAE (bAE) that in extrav	
element in immune cells (such as T- cells).	Protection from Endothelial Cell Apoptosis.	Production of MCP-1
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	995	995
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				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
91	нсинк65	866	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., Ilmmunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
92	нслім65	666	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinuous be used according to these assays are publicly available (e.g., through the ATCC) and continuous another in an adherent mouse preadipocyte cell line. Mouse 373-L1 cells are a continuous substrain of 373 fibroblasts developed through clonal isolation. These cells underen element mouse preadipocyte cell line wherea assays include according to pre-action of 373 fibroblasts developed throug

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adipose-like conversion under appropriate differentiation culture conditions.	4 8 8 4 6 0 0 6 1 5 6 6 7	the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the contract the c	Assays for measuring calcium flux are well-known in the art and iliay be used of fouriery measures.
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum response element in pre-adipocytes.	Stimulation
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	92	92	92

		0 1	of Calcium	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
	<del></del>		Flux in	invention) to mobilize calcium. For example, the FLFR assay may be used to measure initux of calcium.  Cells normally have wery low concentrations of extosolic calcium compared to much higher extracellular
		ă, .ă	pancication beta cells.	calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive
			-	signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely
				modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists of
				antagonists of the invention) include assays disclosed in: Satin ES, et al., Endocrinology, 150(10):4557-601 (1995): Magami H. et al., Endocrinology, 136(7):7960-6 (1995): Richardson SB, et al., Biochem J.
				288 (Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec; 10(8):535-41 (1989), the
	-			contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be
				used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
•				generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells.
				HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with
				SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete
				insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids.
				ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl.
_	<del></del>			Acad. Sci. USA 78: 4339-4343, 1981.
92	HCUIM65 9	999 A	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
		#	transcription	line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays
		<del>-</del>	through	for the activation of transcription through the GATA3 response element are well-known in the art and
		_	GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
		<u>o</u>	element in	modulate expression of mast cell genes important for immune response development. Exemplary assays
		<u>:=</u>	immune cells	for transcription through the GATA3 response element that may be used or routinely modified to test
		<u> </u>	(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
		<u>ن</u>	cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
				Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
				(1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al.,
			.,-	Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
				et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by
				reference in its entirety. Mast cells that may be used according to these assays are publicly available
-				(e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays
<del>-</del> -				include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral
				blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.

This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. Activation of NFkB in mast cells has been linked to production of certain cytokines, such as IL-6 and IL-9. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 106:352-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., J Immunol 166(7):4391-8 (2001); and Marquardt and Walker, J Allergy Clin Immunol 105(3):500-5 (2000), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
Activation of transcription through NFAT response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cells (such as mast cells).
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92	нсигм65	666	Activation of transcription through serum response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).
92	нситмез	666	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
92	HCUIM65	666	Activation of transcription through GAS response element in immune cells (such as T.	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene

cells). Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	4 Activation of response element are well-known in the art and may be used or routinely modified to assess the ability of regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory response element in immune cells, and yescen et al., J Biol Chem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yescen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytotytic and cytotoxic activity.	passays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention through modulate the expression of genes involved in growth and upregulate the function of growth-related genes response in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely antigonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antigonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and matural killer (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	1000 Activation of Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (NFA1)
<u> </u>	666		Н
	HCUIM65	HCUIM65	HCWEB58
	65	92	93

			transcription through	response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			NFAT response	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or
		, <b>.</b>	element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berner et al. Gene
			(such as	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
		_	natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al.,
			cells).	Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999);
		-		and research et al., 3 Diou Chem 200(13), 14203-14233 (1333), une contems of each of which are necessity incorporated by reference in its entirety. NK cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to
				these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
94	HCWGU37	1001	Calcium flux	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to
			'n	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
			chondrocytes	invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium
	,			compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium,
				leading to activation of calcium responsive signaling pathways and alterations in cell functions.
	-			Exemplary assays that may be used or routinely modified to measure calcium flux in chondrocytes
				include assays disclosed in: Asada S, et al., Inflamm Res, 50(1):19-23 (2001); Schwartz Z, et al., J Bone
				Miner Res, 6(7):709-718 (1991); Lannotti JP, et al., J Bone Joint Surg Am, 67(1): 113-120 (1985);
				Sullivan E., et al., Methods Mol Biol 1999; 114:125-133 (1999), the contents of each of which is herein
				incorporated by reference in its entirety. Cells that may be used according to these assays are publicly
<u></u>				available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include boyine chondrocytes.
95	HCWKC15	1002	Regulation of	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			via DMEF1	antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a
			response	reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The
			element in	DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and
			adipocytes	another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle.
			and pre-	GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays
			adipocytes	that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and

(1994); the tr, et al., nts of nat may se 3T3-ous yte to	the art ding iption ble, a way.  3 way.  4 way.  5 do to ed to gonists illen irety.  6 ccording a a	nown in n factors rough
92 (1998); N 5):28514-21 nat regulates 56-73; Berge 2), the conte adipocytes t for may be ude the mou ure a continu a pre-adipo	Il-known in ention (incleation (incleation). REB transc. For exam gnaling pathocytes. CR ocytes. CR ocytes. CR ocytes. CR ocytes. CR ocytes and a bodies and a cyte is sent ocyte in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entice in its entitle in the inclease.	the invention respons
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I Chem, 273 al., J Biol C DNA bind 000 Aug 4; mol. 216:36 ty. Adipoc; through the ding to these along to these on. These of	response ele response ele polypeptid rease cAM variety of chat activate differentiati EB (CRE b that may be noention (ir erger et al., Porn et al., P 2000); and l incorporat e publicly a se adipocyte mouse preagh clonal is rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or rentiation or ren	Response Ebility of polonition to regree for the following the regree for the following a second regree for the following a formula of the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second regree for the following second re
et al., J Bio iu, M.L., et al., J Bio iu, M.L., et tt and novel ol Chem. 2 ods in Enzy in its entire ilable (e.g., used accor yte cell lin onal isolatic atiation cull	the cAMP in the cAMP in the ability of the ability of the ability of the analysis and a second in the actor CR is element des of the iclosed in B (92); Henth 008-1020 (h are herein se assays analysis mount adherent oped through prinate diffe	the Serum assess the a of the inve
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sclosed infactors of the sclosed infactors of the pair regula pair regula transgenic Cullen, B., orporated by assays are plary cells therent mous developed der appropriet	I transcripti ly modified antagonists ession of ge y may be us a dipogene nce for the ough the cA nt activity of fion) includ yymol 216:: Mol Cell I ontents of e. oused accol inely general 3-L1 cells.	f transcript routinely n agonists or on of genes
by polypep de assays di de assays di f a 30-base promoter in 988); and, herein inc ng to these ated. Exem ch is an adh fibroblasts	ictivation of do routine agonists or adulate expraporter assa, major role in ding sequencipitor throuse element the inventhods in Engensch et al. 1998), the contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contrary be contr	activation or be used or bodies and the expression
pre-adipocytes) by polypeptides of the invention (including antibodies and agoinate of adiagonates) invention) include assays disclosed in Thai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, invention) include assays disclosed in Thai, M.V., et al., J Biol Chem, 269(45):28514-21 (1994); S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays include the mouse 3T3-routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to	Assays for the activation of transcription through the cAMP response element are well-known in the ard and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 373-L1 cells. 373-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 373 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through
S., e. S., e. S., e. S., e. S., e. S., e. S., e. S., e. S., e. s. e. s. e. s. e. s. e. s. e. s. e. s. e. s. e. s. e. s. e. s. e. e. e. e. e. e. e. e. e. e. e. e. e.		
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum
	1002	1002
	HCWKC15	HCWKC15
	95	95

			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in pre-	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			adipocytes.	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
				content of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be
				used according to these assays are publicly available (e.g., unough the ATCC) and of may be founded.  generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L.
				cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast
				cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under
95	HCWKC15	1002	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
?		200	transcription	element are well-known in the art and may be used or routinely modified to assess the ability of
			through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			eosinophils).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by
				reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess
				the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in:
				Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992);
				Bhattacharya S, "Granulocyte macrophage colony-stimulating factor and interleukin-5 activate STAT5
				and induce CISI mRNA in human peripheral blood eosinophils" Am J Respir Cell Mol Biol;
				Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in
				eosinophils" J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein
				incorporated by reference in its entirety. Exemplary cells that may be used according to these assays
				include eosinophils. Eosinophils are a type of immune cell important in the late stage of allergic
_				reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic
				reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation,
				normally a direct consequence of interleukin or other cytokine receptor stimulation (e.g. IL3, IL5 or
				GMCSF).

Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Fro Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. For example, a reporter assay (which measures increases in transcription inducible from a NFKB responsive element in EOL-1 cells) may link the NFKB element to a reporter gene and binds to the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.	
Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
1002	1002
HCWKC15	HCWKC15
95	95

95	HCWKC15	1002	Activation of	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line.
				Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the
			through	activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are
			NFAT	well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the
			response	invention (including antibodies and agonists or antagonists of the invention) to regulate INFA1
			immune cells	Exemplary assays for transcription through the NFAT response element that may be used or routinely
			(such as mast	modified to test NFAT-response element activity of polypeptides of the invention (including antibodies
			cells).	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
				(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
				USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J
				Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338
				(1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein
				incorporated by reference in its entirety. Mast cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to
				these assays include the HMC-1 cell line, which is an immature human mast cell line established from
				the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature
				mast cells.
95	HCWKC15	1002	Activation of	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line.
			transcription	Activation of NFkB in mast cells has been linked to production of certain cytokines, such as IL-6 and IL-
			through	9. Assays for the activation of transcription through the NFKB response element are well-known in the
			NFKB	art and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			element in	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
-			immune cells	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			(such as mast	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			cells).	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
				216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al, J
				Immunol 166(7):4391-8 (2001); and Marquardt and Walker, J Allergy Clin Immunol 105(3):500-5
				(2000), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that
				may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary
				human mast cells that may be used according to these assays include the HMC-1 cell line, which is an
				immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia,
				and exhibits many characteristics of immature mast cells.

95	HCWKC15	1002	Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element in immune cells (such as in the human HMC-1 mast cell line) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Sherman, Immunol Rev 179:48-56 (2001); Malaviya and Uckun, J Immunol 168:421-426 (2002); Masuda et al., J Biol Chem 275:38):29331-29337 (2000); and Masuda et al., J Biol Chem 276:26107-26113 (2001), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
56	HCWKC15	1002	Activation of transcription through NFKB response element in immune cells (such as basophils).	This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell line. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al., Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.
95	HCWKC15	1002	Activation of transcription through	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes

response element in immune cells (such as T-cells).  1002 Activation of transcription through NFKB response element in immune cells (such as natural killer cells).  1002 Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	
1002	
	HCWKC15

HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 1002 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC15 / HCWKC1	ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the API response element are well-known in the art an Assays for the activation of transcription through the API response of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies at agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cel Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells the may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the CD28 response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate LL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad S USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL responsive T cells.	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) respons element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including
HCWKC15 1 HCWKC15		Activation of transcription through AP1 response element in immune cells (such as T-cells).	T- G ii.	Activation of transcription through GAS response element in
		1002	1002	1002
95		HCWKC15	HCWKC15	HCWKC15
		95	95	95

			T on Home	antibodies and exemists or enterconists of the invention) include assays disclosed in Berger et al Gene
			cells).	Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used
				according to these assays are publicly available (e.g., through the ATCC).
95	HCWKC15	1002	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of
			through	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			NFAT	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
			response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
			element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			such as T-	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Nati
			cells).	Acad Sci USA 85:6342-6346 (1988); Sertling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
				Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are
				herein incorporated by reference in its entirety. T cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to
				these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T
				cells.
98	HCWKC15	1002	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as T-	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
				herein incorporated by reference in its entirety. T cells that may be used according to these assays are
	,			publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to
				these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T
				cells.

Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NR cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Activation of transcription through cAMP response element
1002	1002	1003
HCWKC15	HCWKC15	HCWLD74
	95	96

			(CRE) in pre- adipocytes.	contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists
			•	or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the
				ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a
				continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre- adinocyte to adinose-like conversion under appropriate differentiation conditions known in the art.
96	HCWLD74	1003	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
			transcription through	line. Activation of GA1A-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and
			GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
			element in immune cells	modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test
			(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
			cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
				(1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al.,
				Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
			_	et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by
				reference in its entirety. Mast cens that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays.
				include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral
				blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
96	HCWLD74	1003	Activation of	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line.
			transcription	Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the
			through	activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are
			NFAT	well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the
			response	invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT

cells in in in cells in in cells in in cells in cells in cells in cells in cells in cells in cells			
HCWLD74 1003 / HCWLD74 1003	transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sc (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sc (1998); and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the cAMP response element are well-known in the an and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assa for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:634-63 (1998); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-6 (1998); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is a suspensi culture of IL-2 dependent T cells that also respond to IL-4.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcripud (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998). Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA
HCWLD74	element in immune cells (such as mast cells).	n Sci Sti	Activation of transcription through STAT6 response element in immune cells (such as
		1003	1003
96		HCWLD74	HCWLD74
		96	96

			natural killer cells).	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly
96	HCWLD74	1003	Activation of transcription through GAS response	available (e.g., through the ATCC).  Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in immune cells (such as T- cells).	functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used
96	HCWLD74	1003	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	according to these assays are publicly available (e.g., through the ATCC).  Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and
96	HCWLD74	1003	Activation of	cytotoxic activity. Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in

transcription the art and may be used or routinely modified to assess the ability of polypeptides of the invention through through (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and response factors and response factors and response factors and response in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or modified to test SRE activity of the polypeptides of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Ortho Sci USA 85:6342-6346 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer than be used according to these assays include the NK-YT cell line, which is a human natural killer and be used according to these assays include the NK-YT cell line, which is a human natural killer.	Activation of Assays for the activation of transcription through the cAMP response element are well-known in the art transcription antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription through factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to assays for transcription through the cAMP response element at may be used or routinely modified to assays for transcription include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-adjpocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cell line that is a continuous substrain of 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Myoblast cell Assays for muscle cell proliferation are well known in the art and may be used or routinely modified to proliferation assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell invention) to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the
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				invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins 4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation" J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells" J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cell line. Rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation
97	нонев60	1004	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-I expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
97	нонев60	1004	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the

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ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly	Assays for the activation of transcription through the API response element are well-known in the art and Assays for the activation of transcription through the API response element are done cell functions. antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including
	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Activation of transcription through CD28 response element in immune cells (such as T-cells).	Activation of transcription through GAS response element in immine cells
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			(such as T-cells).	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	
	нривв60	1004	Activation of transcription through NFAT response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	<del>-</del>
97	нонев 60	1004	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which	" C E E

				is a suspension culture of IL-2 and IL-4 responsive T cells.
97	нонев60	1004	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
76	нриев 60	1004	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAL) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Bur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and cytotoxic activity.
86	HDHIA94	1005	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for

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				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cens in suspension curious, which which activated by antigen and of cylobanes, initiate and upregulate t
66	HDHIMA45	9001	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			activation of	rounnely modified to assess the abinity of polypeptides of the invention (including antibodies and agonists of antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-
				196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				exemplary cells that may be used according to these assays include 1.12 cells. 11.10 secreted from 1.12 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
				ILA, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
				isolated from cord blood.
<u>8</u>	HDHMA72	1007	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
				of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol

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216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	3 6 7 5 6 6 6 7 D. I	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
(such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as T-cells).	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Upregulation of CD152 and activation of T cells
	1008	1008	1009
	HDLAC10	HDLAC10	HDLA028
	101	101	102

				may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., Toward (2010); McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et al., McCoy et a
				an, infinitely Cell Biol 77(1).1-10 (1999), Costet vegal et al., Cell Opin Infinitely 11(9):274-500 (1997), and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.  These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
103	HDPBA28	1010	Stimulation of insulin secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
			from pancreatic	FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
		\ <u>-</u>	oeta cens.	Exemplary assays that may be used of fourthery mounted to test for summation of mount sectoring (norm pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li,
-				M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of
				which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable
				insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
103	HDPBA28	1010	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			IL-10 and activation of	routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of $L-10$ and/or activation of

		cells (such as	Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells
-		human	in culture based on quantitation of the ATP present which signals the presence of metabolically active
		eosinophil EOL-1 cells).	cells. Eosinophilis are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eosinophil cell lines that may be used according to these assays are publicly available and/or may be routinely generated. Exemplary essing that may be used according to these assays include EOL 1 Cells.
HDPBQ71	1012	Production of IFNgamma using a T cells	ENgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. ENg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays tisclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell recentor and CD3. CD4. or CD8. These cells mediate human in treuture in the thymus and express a T Cell
<del></del>		_	preactivated to enhance responsiveness to immunomodulatory factors.
HDPC025	1013	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and
			proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ohtani KI, et al., Endocrinology, 139(1):172-

				8 (1998); Krautheim A, et al, Exp Clin Endocrinol Diabetes, 107 (1):29-34 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci.
106	HDPCO25	1013	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T
107	HDPCY37	1014	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem

				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
107	HDPCY37	1014	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
107	HDPCY37	1014	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL.10, IL.13, IL.5 and IL.6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.

of S or	Jo	in of TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, I cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
	Production of MCP-1	Production TNF alpha b dendritic cells
	1016	1017
норгезз	HDPGK25	HDPGP94
108	109	110

WO 02/102994 PCT/US02/08278

				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				In its entirety. Auman denoritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
110	HDPGP94	1017	Production of	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that
			MIPlaipha	upregulate monocyte/macrophage and 1 cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
				activation of monocytes/macrophages and 1 cens. Such assays that thay be used of fourmery modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., Lymphocytes: a practical approach Chapter 6:138-100 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol
				8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol
				65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.  Human dendritic cells that may be used according to these assays may be isolated using techniques
		-		disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
		_		suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities
	HDPHI51	1018	Regulation of	Assays for the regulation of transcription through the FAS promoter element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through the	antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a
			FAS	reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is
			promoter	regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in

	T	
livers of diabetic mice. This stimulation of transcription is also somewhat glucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 (Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (NFA1) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
element in hepatocytes	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Activation of transcription through NFAT response in immune cells (such as Tcells).
·	1018	1019
	HDPHI51	HDPJF37
	=	112

WO 02/102994 PCT/US02/08278

			in immine	assess the ability of polynentides of the invention (including antihodies and agonists or antagonists of the
			cells (such as monocytes)	invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions.
				Exemplary assays that may be used or routinely modified to measure calcium flux in immune cells (such as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther, 269(3):891-896
				(1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 74(2)
				589-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays
				are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that
81	HCMSQ56	886	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely
			ICAM-1	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			,	antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J,
				13(2):279-261 (2001); and, Milyamoto N, et al., Am J ramot, 130(3):1733-1739 (2000), the contents of each of which is herein incomorated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary cells that may be used according to these assays include microvascular endothelial cells
				(MVEC).
82	HCMST14	686	Production of	L-6 FMAT. L-6 is produced by T cells and has strong effects on B cells. L-6 participates in L-4
			正-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J

				J Biol Chem. 276/28):26107-26113 (2001): Yeatman CF 2nd. et al., J Exp Med. 192(8):1093-1103
				(2000);Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan. I Atheroscler Thromb 3(2): 75-80 (1996): the contents of each of which are herein
				incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
85	HCOOS80	992	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT)
			transcription	response element are well-known in the art and may be used or routinely modified to assess the ability of
			through	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to requiste NFAT transcription factors and modulate expression of genes involved in immunomodulatory
			response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
			element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
-			immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			(such as	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
			natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al.,
			cells).	Int J Blochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J immunol 29(3):838-844 (1999);
				alid research at 1, 3 droit Circli 200(19):14203-14233 (1993), tile contents of each of which are ficient
				incorporated by reference in its entirety. NK cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to
				unese assays include the INK-11 cell line, which is a numan natural Killer cell line with cytolytic and
98	HCOCT05	993	Unregulation	H.A-DR FMAT, MHC class II is essential for correct presentation of antigen to CD4+ T cells.
3	) )	)	of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
			and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and
			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or
				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
				cells. Such assays that may be used or routinely modified to test immunomodulatory activity of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include,
				for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp
				Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher

and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Gamma Interferon Activation Site (UAAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate gene expression (commonly us STAT transcription factors) involved in a wide variety of reductions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1800-1991 (1999); and Henttinen et al., I Immunol 155(10):4882-4587 (1995); the contents of each of which are herein incorporated by reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention of immune cells include assays disclosed and/or cited in: Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992); Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in eosinophils" J Biol Chem; Oct 20;275(2):33167-75 (2000); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Bosinophils are a type of immune cell important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammory response of late stage allergic reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activate of GMCSF).	Assays for the activation of transcription through the API response element are known in the art and that be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test
t t t ii s g	C O ELICIO TO LICENSE	Activation of transcription through API arresponse
	994	994
	HCUBS50	HCUBS50
	87	.87

				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
			immune cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and
			(such as T-	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			cells).	(1988); Rellahan et al., J Biol Chem 2/2(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
				which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to
				these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
				according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell
88	HCITCKAA	900	Profection	Caspase Anontosis Rescue Assays for caspase anontosis rescue are well known in the art and may be
8	TICOCIN		from	caspase Apoplesis research. Assays for easpase apoplesis researchaic are necessaring in the area of the invention (including antibodies
			Endothelial	and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary
			Cell	assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis rescue of
			Apoptosis.	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
				the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J
				Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each
				of which are herein incorporated by reference in its entirety. Endothelial cells that may be used
				according to these assays are publicly available (e.g., through commercial sources). Exemplary
				endothelial cells that may be used according to these assays include bovine aortic endothelial cells
				(bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions
				that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell
				extravasation.
88	HCUCK44	995	Production of	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and
			MCP-1	act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be
				used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and
				modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate
				the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the
				activation of monocytes and T cells. Such assays that may be used or routinely modified to test
				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol
				158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety.

				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
91	нсинкез	866	Activation of transcription through serum response	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in immune cells (such as natural killer cells).	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
92	нсимбя	666	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1994); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be required.
				LI CEIL IIIIE WILICH IS AN AGNERARI MOUSE PREADIPOCYTE CELL IIIIE. MOUSE 313-LI CEUS ALE A CONTINUOUS substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to

adipose-like conversion under appropriate differentiation culture conditions.	Assays for the activation of transcription through the cAMP response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the activation of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention tincluding antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for measuring calcium flux are well-known in the art and may be used of routiliery incurried to
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum response element in pre- adipocytes.	Stimulation
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ists of the factorium. racellular esponsive tinely conists or 0):4589-chem J, (89), the at may be outinely T15 Cells. red with ete orticoids. Natl.	ast cell  n. Assays art and ing s and ry assays to test gonists or illen and 6342-6346 ero et al., fenderson ated by iilable isays
gonists or antago measure influx or much higher exation of calcium any be used or ro antibodies and a corinology, 136(son SB, et al., Bi 2ncreatic cells to and/or may be says include HI siet cells transfor or The cells sections anterre et al. Pro anterre et al. Pro anterre et al. Pro	HMC-1 human mokine producti vell-known in the invention (inclust anscription fact opment. Exempoutinely modifies and 6:1-10 (1998); CAcad Sci USA 8; Rodriguez-Palr 596 (1997); and re herein incorpors are publicly averaging to these a richer from the
antibodies and a y may be used to y may be used to cium compared to activate and as a say a says that an including in LS, et al., End (1995); Richard in 1989 Nov-Dec in its entirety. I rough the ATCC ording to these as Syrian hamster in corticoid recept pressed by some 219: 547-551; S	aling pathway in cytokine and che use element are v lypeptides of the gulate GATA3 the response develoate in Gene of al., Gene (et al., Proc Natl.: 563-571 (1999), Cell 89(4):587. Cell 89(4):587. In to these assaimay be used according and to these assaimay be used according to the second the second to the second to the second to the second the second to the second to the second second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the second to the
ttion (including the FLPR assa of cytosolic calmulax of calcium citions. Exemplotides of the inwellsclosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in: Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed in Satisticolosed i	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element activity of polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-634 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Hendersor et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line.
assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-601 (1995); Mogami H, et al., Endocrinology, 136(7):2960-6 (1995); Richardson SB, et al., Biochem J, 288 ( Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec; 10(8):535-41 (1989), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., though the ATCC). Exemplary human mast cells that may be used according to these assays are publicly such and the parither all and the LIMC 1 cell line which is an immediate burgen.
usess the ability of polypeptides of the invention) to mobilize calcium. For ecells normally have very low concent calcium. Extracellular factors can causignaling pathways and alterations in modified to measure calcium flux by antagonists of the invention) include a foot (1995); Mogami H, et al., Endocri 288 (Pt 3):847-51 (1992); and, Meats contents of each of which is herein in used according to these assays are pul generated. Exemplary pancreatic cell HTTT15 are an adherent epithelial cel SV40. These cells express glucagon, sinsulin, which is stimulated by glucos ATTC# CRL-1777 Refs: Lord and Acad. Sci. USA 78: 4339-4343, 1981	ion of GATA-3 ation of GATA-3 ation of GATA-3 ation of transcrip or routinely monor against a geometry of the invention ods in Enzymol ell et al., Cold Solol 29(12):3914-ell Biol 14(6):4; its entirety. Mait the ATCC).
assess the abi invention) to Cells normall calcium. Ext signaling pat modified to r antagonists o 601 (1995);N 288 ( Pt 3):8, contents of e used according generated. E HITT15 are a SV40. These insulin, whic ATTC# CRL	This reporter line. Activati for the activati for the activati may be used antibodies ar modulate ext for transcript GATA3-resp antagonists c Malm, Meth (1988); Flaw Eur J Immun et al., Mol C reference in (e.g., through include that line)
of Calcium Flux in pancreatic beta cells.	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
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This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT invention (including antibodies and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 and agonists or antagonists of the invention) include assays disclosed in Berger et al., Froc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci (1998); and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are incorporated by reference in its entirety. Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. Activation of NFkB in mast cells has been linked to production of certain cytokines, such as L-6 and L-9. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn at al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci UsA 85:6342-6346 (1988); Stassen et al., J 16:362-368 (1992); Henthorn et al., Proc Natl Ac
Activation of transcription through NFAT response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cells (such as mast cells).
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92	HCUIM65	666	Activation of transcription through serum response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).
92	HCUIM65	666	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
92	HCUIM65	666	Activation of transcription through GAS response element in immune cells (such as T-	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene

66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are include the NK-YT cell line, which is a human natural killer cell line with cytolytic and characteristy.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 Cells (141711)
cells).	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Activation of
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	<b>н</b> СUIM65	HCUIM65	HCWEB58
	92	92	93

			transcription through NFAT response element in immune cells (such as natural killer cells).	response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yescen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NR cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NR cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
46	HCWGU37	1001	Calcium flux in chondrocytes	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux in chondrocytes include assays disclosed in: Asada S, et al., Inflamm Res, 50(1):19-23 (2001); Schwartz Z, et al., J Bone Miner Res, 6(7):709-718 (1991); Iannotti JP, et al., J Bone Joint Surg Am, 67(1): 113-120 (1985); Sullivan E, et al., Methods Mol Biol 1999; 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include bovine chondrocytes.
95	HCWKC15	1002	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and

invention) include assays disclosed inThai, M. V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, invention) include assays disclosed inThai, M. V., et al., J Biol Chem, 269(45):28514-21 (1994); S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); S., et al., J Biol Chem, 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;275(31):236-73; Biol Chem. 2000 Aug 4;	Assays for the activation of transcription through the cAMP response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 373-L1 cells. 373-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 373 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention
invention) include assays disclosed inThai, M. V., et al., J Einvention) include assays disclosed inThai, M. V., et al., J S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., "Identification of a 30-base pair regulatory element and no human GLUT4 promoter in transgenic mice", J Biol Chem Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Eleach of which is herein incorporated by reference in its ent be used according to these assays are publicly available (eroutinely generated. Exemplary cells that may be used according to the an adherent mouse preadipocyte cell substrain of 3T3 fibroblasts developed through clonal isola adipose-like conversion under appropriate differentiation of	7 July 20 -9-9-9-9-9-9-9-9-9-9-9-9-9-9-9-9-9-9-9	g g
	Activation o transcription through cAMP response element (CRE) in pre adipocytes.	Activation of transcription
	1002	1002
	HCWKC15	HCWKC15
	-	95

		Ì		
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			pre-	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al.,
			adipocytes.	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			•	content of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be
				used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1
				cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast
				cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under
				appropriate differentiation conditions known in the art.
95	HCWKC15	1002	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
	_	-	transcription	element are well-known in the art and may be used or routinely modified to assess the ability of
			through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			eosinophils).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
			•	Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by
				reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess
				the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in:
				Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992);
				Bhattacharya S, "Granulocyte macrophage colony-stimulating factor and interleukin-5 activate STAT5
				and induce CIS1 mRNA in human peripheral blood eosinophils" Am J Respir Cell Mol Biol;
				Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in
				eosinophils" J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein
	···			incorporated by reference in its entirety. Exemplary cells that may be used according to these assays
				include eosinophils. Eosinophils are a type of immune cell important in the late stage of allergic
				reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic
				reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation,
				normally a direct consequence of interleukin or other cytokine receptor stimulation (e.g. IL3, IL5 or
				GMCSF).

Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Lor example, a reporter assay (which measures increases in transcription inducible from a NFKB responsive element in EOL-1 cells) may link the NFKB element to a reporter gene and binds to the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recritied to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.	
Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
1002	1002
HCWKC15	HCWKC15
95	95

95	HCWKC15	1002	Activation of	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line.
				Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature human cell strains and exhibits many characteristics of immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature human mast cell strains and immature hum
56	HCWKC15	1002	Activation of transcription through NFKB response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. Activation of NFkB in mast cells has been linked to production of certain cytokines, such as IL-6 and IL-9. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al, J Immunol 166(7):4391-8 (2001); and Marquardt and Walker, J Allergy Clin Immunol 105(3):500-5 (2000), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.

<b>40.204</b>		Assays for the activation of transcription through the Scientification of transcription the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes
Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cells (such as basophils).	Activation of transcription through
1002	1002	1002
HCWKC15	HCWKC15	HCWKC15
95	95	95

			response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in immune cells	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
			(such as T-	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			cells).	(1988); Benson et al., J. Immunol 133(9):3002-3073 (1994); and Diack et al., vius Genes 14(2):103-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may
				be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T
				cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).
95	HCWKC15	1002	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et
			natural killer	al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et
			cells).	al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its
				entirety. NK cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary NK cells that may be used according to these assays include the NK-YT cell line,
				which is a human natural killer cell line with cytolytic and cytotoxic activity.
95	HCWKC15	1002	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
			transcription	(STAT6) response element are well-known in the art and may be used or routinely modified to assess the
			through	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			STAT6	to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	test STAT6 response element activity of the polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998);
			(such as	Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA
			natural killer	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
			cells).	69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol
				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the

_				
	ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g. through the ATCC).	Assays for the activation of transcription through the API response element are well-known in the art and Assays for the activation of transcription through the ability of polypeptides of the invention (including may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the CD28 response element are well-known in the art Assays for the activation of transcription through the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including
		Activation of transcription through AP1 response element in immune cells (such as T-cells).	Activation of transcription through CD28 response element in immune cells (such as Tcells).	Activation of transcription through GAS response element in immune cells
		1002	1002	1002
		HCWKC15	HCWKC15	HCWKC15
		95	95	95
			•	

			(such as T. cells).	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
95	HCWKC15	1002	Activation of transcription through NFAT response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
56	HCWKC15	1002	Activation of transcription through NFKB response element in immune cells (such as Teells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.

HCWKC15 1002 Activation of Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NPAT) transcription response element are well-known in the art and may be used or routinely modified to uses sets the ability of transcription (including antibodies and a gonists or antagonists of the invention) incomponent than may be used or content to the section of polypeptides of the invention (including antibodies and a gonists or antagonists of the invention) incomponent than may be used or contents of the invention (including element in incomponent and the transcription factors and modulate expression of genes invention including cells.  Acta Set 1054 83:6342-6346 (1988), Aramburu et al., They Med 182(2)(8)(1892), the Beet et al., and trainoid sea and a genists or antagonists of the invention) include assays sickled the and Malin, Methods in Enzymol 216(362-368 (1992); the Beet et al., and trainoid sea and a genistic or authorious in Enzymol 216(362-368 (1992); the Beet et al., and trainoid sea and a genistic or authorious in Enzymol 216(362-368 (1992); the Beet et al., and trainoid sea and a genistic or authorious in Enzymol 216(362-368 (1992); the Activation of the Enry Seene et al., 1810 (Chen 264); 14285-1429 (1993); the contents of each of which are herein incorporated by reference in its entirery. N. Cells that may be used according to these assays are trained and the Enry Seene et al., 1810 (Chen 264); 14285-1429 (1993); the contents of each of which are herein incorporated by reference in its entirery. N. Cells that may be used according to these assays include the Nr. YT cell line, which it is a human natural killer cell line with cytolytic and finemanial killer (including anthodies and agonists or antagonists of the invention included assays for the activation of transcription through the SRE that may be used according to these assays included the may be used according to these assays include the may be used according to the section incorporated by reference in its entirety. T				l
HCWKC15 1002 A  tr tr tr N N N N C C C C C C C C C C C C C C C	The State of transcription through the Nuclear Factor of Activated T cells (NFAT)	Assays for the activation of transcription transcription and may be used or routinely modified to assess the ability or response element are well-known in the art and may be used or routinely modified to the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription through the NFAT response element that may be used or functions. Exemplary assays for transcription through the NFAT response element that may be used or functions. Exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention of 16:362-368 (1995); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al. Acad Sci USA 85:6342-6346 (1998); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al. Acad Sci USA 85:6342-6346 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):840 (1999); Int J Biochem Cell Biochem Cell Biochem Cell Biochem		
HCWKC15 1002  HCWKC15 1002  HCWLD74 1003		Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Activation of transcription through cAMP response element
H 10 9			1002	1003
95		HCWKC15	HCWKC15	HCWLD74
		95	95	96

			(CRE) in pre-adipocytes.	contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the
				ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a
				continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
96	HCWLD74	1003	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
			through	fine. Activation of transcription through the GATA3 response element are well-known in the art and
			GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
			immune cells	modulate expression of mast cell genes important for infiniting response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test
			(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
			cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
				Maim, Methods in Enzymol 210:302-308 (1992); Henthorn et al., Froc Inali Acad 3ci USA 63:0342-0340 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al.,
				Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
				et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by
				reference in its entirety. Mast cells that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral
				blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
96	HCWLD74	1003	Activation of	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line.
			transcription	Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the
			through	activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are
			NFAT	well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the
			response	invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT

element in transcription factors and modulate expression of genes involved in immunoculatory functions.  Innumo cells.  Sexued as a mast modified to test NPAT-response element that may be used or routinely minumo cells.  Cells.  USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1998). The Boor et al., Int J Biochem Cell Biol 31 (10):121-1256 (1999), Ali et al., J USA 85:6342-6346 (1992), And Tumer et al., J Exp Med 188:277-537 (1998), Immam rate relations are also assays include the PHMC-1 cell line, which is an immature human mast cells that may be used according to these assays include the PHMC-1 cell line, which is an immature human mast cell time established from the epipheral blood of a patient with mast cell teukemia, and exhibits many characteristics of immature transcription and may be used or routinely modified to sess the admitted of the session of the epipheral blood of the apatient with mast cell teukemia, and exhibits many characteristics of immature calls and agonists or alterior may be used or routinely modified to used routinely modified to used routinely modified to used routinely modified to used routinely modified to used routinely on the properties of the invention included assays disclosed in Berger et al., Cells that may be used or routinely the CAMP response element that may be used or routinely on the ease and agonists or an argonises or dense in incention of the ease and agonises or all agonises or all agonises or all agonises or called and according to these assays include the expression of the ease an			<del></del>
HCWLD74 1003 Activation o transcription through cAMP response element in immune cells).  HCWLD74 1003 Activation of transcription through cAMP response element in immune cells).  HCWLD74 1003 Activation of transcription transcription through cells).	transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sc (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sc (1995), and Turner et al., 1 Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the cAMP response element are well-known in the and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assafor transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-63 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., Immunol 161(2):659-6f (1988); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the HT2 cell line, which is a suspensi culture of IL-2 dependent T cells that also respond to IL-4.	
HCWLD74 1003	element in immune cells (such as mast cells).	on o otion in cell T-	or or or or or or or or or or or or or o
		1003	1003
96		HCWLD74	HCWLD74
		96	96

			natural killer	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
			cells).	69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
96	HCWLD74	1003	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
			transcription through GAS	element are well-known in the art and may be used or routinely modified to assess the ability of polyneptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in berger et al., Gene 66.1-10 (1908). Cullen and Malm. Methods in Fraymol 216.362-368 (1992). Henthorn et al., Proc Natl
			cens).	Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
				reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used
				according to these assays are publicly available (e.g., through the AICC).
96	HCWLD74	1003	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT)
			transcription	response element are well-known in the art and may be used or routinely modified to assess the ability of
			through	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			NFAT	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
			response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
			element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			(such as	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
			natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al.,
			cells).	Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999);
				and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein
				incorporated by reference in its entirety. NK cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to
				these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and
				cytotoxic activity.
96	HCWLD74	1003	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in

				invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins 4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation." J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells." J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cell line. Rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.
97	нрнев60	1004	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-I expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
97	нонев 60	1004	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the

ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly	available (e.g., through the ATCC).  Assays for the activation of transcription through the API response element are well-known in the art and Assays for the activation of transcription through the API response element and other cell functions. antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and modified to test API-response element activity of polypeptides of the invention (acluding antibodies and modified to test API-response element activity of polypeptides of the invention (acluding antibodies and modified to test API-response element activity of polypeptides of the invention (acluding antibodies and cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell 85:6342-6346 (1988); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the CD28 response element are well-known in containing and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate LL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Busymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci (1998); Cullen and Incompared by reference in its entirety. T cells that may be used according of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of LL-2 and LL-4 responsive T cells.	Assays for the activation of transcription through the Gamma Interferon Activation Site (CAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including
	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Activation of transcription through CD28 response element in immune cells (such as T-cells).	Activation of transcription through GAS response element in immune cells
	1004	1004	1004
	нонев60	нонев60	нрнев60
	76	76	97
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			(such as T-cells).	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
76	нонев60	1004	Activation of transcription through NFAT response element in immune cells (such as Teells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
97	нонев60	1004	Activation of transcription through STAT6 response element in immune cells (such as Teells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which

			1
is a suspension culture of IL-2 and IL-4 responsive T cells.			TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Production of TNF alpha by dendritic cells
	1004	1004	1005
	нонев60	нриев60	нрнга94
	97	97	86

				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" (Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
66	HDHMA45	1006	Production of IL-10 and activation of T-cells.	Assays for production and functional activities.  Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "Th-elper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
100	HDHMA72	1007	Activation of transcription through NFKB response element in immune cells	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol

				may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agoinsts of antagolitsts of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et Inmania Cell Biol 77(1):1-10 (1999): Oostervegal et al., Curt Onin Immunol 11(3):294-300 (1999);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
103	HDPBA28	1010	Stimulation of insulin	Assays for measuring secretion of insulin are well-known in the art and may be used or routinety modified to assess the ability of polypeptides of the invention (including antibodies and agonists or an accounting to etimilate insulin secretion. For example, insulin secretion is measured by
			from	FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
			pancreatic	glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.  Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
				pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren B et al. Am I Physiol 277(4 Pt 2):R959-66 (1999); Li.
				M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995);
				and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable
				insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose
				inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
103	HDPBA28	0101	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of

T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes	Isolated from cord blood.  CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 has been found to be associated with CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with CD69 is not expressed on resting T cells, B cells, and leukocytes are inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are inflammation antibodies and agonists or antagonists of the invention) to modulate the activation of invention (including antibodies and agonists or antagonists of the invention of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., Ann Rheum Dis 52(6):457-460 Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 Siegel, Eur J Immunol 25(12):3215-3221 (1995); and proporated by reference in its entirety. Human T cells and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vide acceptable well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of eosinophil cells and cell lines. For example, the CellTiter-Gloô Luminescent Cell
T-cells.	Upregulation of CD69 and activation of T cells	Regulation of viability or proliferation of immune
	1011	1012
	HDPBQ02	HDPBQ71
	104	105

			cells (such as	Viability Assay (Promega Com., Madison, WI, USA.) can be used to measure the number of viable cells
			human	in culture based on quantitation of the ATP present which signals the presence of metabolically active
			eosinophil	cells. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues
			EOL-1 cells).	and mediate the inflammtory response of late stage allergic reaction. Eosinophil cell lines that may be used according to these assays are publicly available and/or may be routinely generated. Exemplary eosinophil cells that may be used according to these assays include FOL-1 Cells.
105	HDPBQ71	1012	Production of	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a
	,		IFNgamma	proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and
			using a T	inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for
			cells	immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory
				activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely
				modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate
				TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
				for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg),
				and the activation of T cells. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening
				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000);
				Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998);
				Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
				the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
				preactivated to enhance responsiveness to immunomodulatory factors.
901	HDPC025	1013	Regulation of	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may
			viability and	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
	_		proliferation	and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta
			of pancreatic	cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable
			beta cells.	cells in culture based on quantitation of the ATP present which signals the presence of metabolically
				active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and
				proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in: Ohtani KI, et al., Endocrinology, 139(1):172-

8 (1998); Krautheim A, et al, Exp Clin Endocrinol Diabetes, 107 (1):29-34 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	Assays for the activation of transcription through the NFKB response element are well-known in the an and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the MFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to assays for transcription assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-and Malm, Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
	Activation of transcription through NFKB response element in immune cells (such as Teells).	Activation of transcription through cAMP response element (CRE) in preadipocytes.
	1013	1014
,	HDPC025	HDPCY37
	106	107

				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
107	HDPCY37	1014	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
107	HDPCY37	1014	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.

				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"  Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3383-3593 (1998); Vernassell et al., J Immunol 138:2919-2923 (1997); and Ivardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
	·			cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
110	HDPGP94	1017	Production of	MIP-Ialpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that
			MIPlalpha	upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
				activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to
				test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Saunapoin and Eremin, J. K. Com Sung Editid 43(1):9-19 (2001); Diakes et al., Trainsp minimitid. 8(1):17-20 (2000): Verbasself et al. TImmingl 158-2010-2025 (1997): and Nardelli et al. TI enkoc Riol
				65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.
				Human dendritic cells that may be used according to these assays may be isolated using techniques
				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
				suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
				proliferation and functional activities.
111	HDPHI51	1018	Regulation of	Assays for the regulation of transcription through the FAS promoter element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through the	antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a
			FAS	reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is
			promoter	regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in

Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 (Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.	Assays for the activation of transcription through the Signal Transducers and Activators of transcription through the Signal Transducers and Activators of transcription are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol 69(7):1521-1523 (2000); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the its entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 Cens (1777) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
element in hepatocytes	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Activation of transcription through NFAT response in immune cells (such as Tells).
	1018	1019
	HDPHI51	HDPJF37
		112

				Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to
		,		these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
113	HDPJM30	1020	Production of	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and
			MCP-1	act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be
				used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and
				modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate
				the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the
				activation of monocytes and T cells. Such assays that may be used or routinely modified to test
				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol
				158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety.
				Human dendritic cells that may be used according to these assays may be isolated using techniques
				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
				suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
				proliferation and functional activities.
113	HDPJM30	1020	Regulation of	Assays for the regulation of transcription through the FAS promoter element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through the	antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a
			FAS	reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is
			promoter	regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in
			element in	livers of diabetic mice. This stimulation of transcription is also somewhat glucose dependent.
			hepatocytes	Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in
				hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000);
				Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 ( Pt 1):257-65
				(1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368
				(1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that

may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) androf may be routinely generated. Exemplar hypatocyste that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocordicoids, insulin, or cAMP cassays for the activation of transcription through the cAMP response clement are well-known in the art response. CREB plass a major role in adoptation of genes involved in a wide variety of cell functions. For example, a response clement are well-known in the art articories and agonists or anagonists of the invention of including antibodies and agonists or anagonists of the invention of including antibodies and agonists or anagonists of the invention of including antibodies and agonists or anagonists of the invention including antibodies and agonists and Manin. Methods in Enzymoral Class 62-63 (1992), Henthorn et al., Proc Narl Acad Sci USA 8:56342.  IT3-L1/CRE reportes element are velled to assays for transcription through the cAMP response clement at many be used according to the sassy for transcription through the cAMP response clement at many be used according to the sassy for transcription through the cAMP response clement at many be used according to the sassy for transcription through a state of the invention (including antibodies and agonists of the invention) include assays disclosed in Berger et al., Proc Narl Acad Sci USA 8:56342.  Pre-adjpocytes that may be used according to these assays are publicly available (e.g., through the action is an admonstration) and Manin. Action of the sassays include 173-11 is an adherent mouse preadjpocyte call in that at and may be used according to these assays are publicly available (e.g., through the element in minute cells and page and according to the sassays are publicly available (e.g., through the element in minute and any be used according to the adjpocyte of the invention of the adjpocytes of the invention of the adjpocytes of the invention of the adjpocytes of the i

eosinophils. J Biol Chem; Oct 20;2/3(42):3310/-/3 (2000); the contents of each of which are nerein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are a type of immune cell important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic
<u></u> و
Cell ERK modified to assess the ability of polypeptides of the invention (including antibodies and agonists or Signaling antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Berra et al., Biochem Pharmacol 60(8):1171-1178 (2000); Gupta et al., Exp Cell Res 247(2):495-504 (1999);
Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999): the contents of each of which are herein incomparated by reference in its entirety. Endothelial
cells that may be used according to these assays are publicly available (e.g., through the ATCC).
Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved
in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
Activation of Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
_ ·
GAS
-
SI.
(such as T- antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene

66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used reference in its entirety.	Kinase assay. Kinase assays, for example an GSK-3 assays, for PI3 kinase signal transduction that Kinase assay. Kinase assays, for example an GSK-3 assays, for example an GSK-3 assays, for example and cell survival are well-known in the art and may be used or routinely regulate glucose metabolism and cell survival. Exemplary antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) biabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent adipocyte cells that may be used according to these assays include 3T3-L1 cells developed through clonal mouse preadipocyte cell line that is a continous substrain of 3T3 fibroblast cells developed through clonal	isolation and undergo a pre-adipocyte to adipose-ince conversion unity appropriate and undergo a pre-adipocyte to adipose-ince conditions known in the art.  L.4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known on the art and may be used or routinely modified to assess the ability of polypeptides of the invention in the art and may be used or routinely modified to mediate humoral or cell-mediated stimulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulatory proteins evaluate the production of immunity. Exemplary assays that test for immune cells, such as B cells, T cells, macrophages and cytokines, such as IL.4, and the stimulation of immune cells, such as B cells, T cells, macrophages and cytokines, such as Basays that may be used or routinely modified to test immunomodulatory activity of mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., Nat Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 8(5):277-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in
cells).	Activation of Adipocyte P13 Kinase Signalling Pathway	Production of IL-4
	1022	1022
	HDPND46	HDPND46
	115	115

may be	odified to iists of the r routinely ts or ells (such he venous asscular le in the	tinely its or sed or FASEB J, intents of ling to 1. cells	ntinely sts or sed or FASEB J, ontents of ding to d. cells	used or and vation of
the art. Human I cells are primary human lymphocytes that mature in the trymus and express a 1 cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human unbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and activation of the invention) to etimulate or inhibit production of IL-10 and/or activation of
	Production of IL-8 by by endothelial cells (such as Human Umbilical Cord Endothelial Cells).	Production of ICAM-1	Production of ICAM-1	Production of IL-10 and
	1022	1023	1024	1024
	HDPND46	HDPOE32	нррон06	нDРОН06
	115	116	117	117

		<del></del>
T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Robinson, DS, et al., "Th-elper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes		Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation,, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Cupita et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature
T-cells.	Activation of transcription through GAS response element in epithelial cells (such as HELA cells).	Activation of Endothelial Cell p38 or JNK Signaling Pathway.
	1025	1025
	HDPOZ56	HDPOZ56
	118	118

				410(6824): 37.40 (2001): and Cobb MH. Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of
				each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC),
				which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
119	HDPPA04	1026	Production of	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that
			MIP1alpha	upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Evenulary assays that test for immunomodulatory proteins evaluate the
				production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
				activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to
				test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol
				8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol
				65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.
				Human dendritic cells that may be used according to these assays may be isolated using techniques
				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
				suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
				proliferation and functional activities.
120	HDPPH47	1027	tion of	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and
			MCP-1	act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be
				used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and
				modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate
				the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the
				activation of monocytes and T cells. Such assays that may be used or routinely modified to test
				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol

HDPSB18 1003 Stimulation collute, which, when activated by antigen and/or cytokines, infaine and quergulate T cell superability cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in disclosed herein of cherwise known in the art. Human dendritic cells are antigen presenting cells in proliferation and functional activities.  Profit issuit modified to a sesses ha ability of polypequides of the invention (including authodics and agonists or drei envention) to stimulate insulin secretion from paracratic beat cells to supergulated by from the art and may be used or routinely modified to test for stimulation of insulin secretion from paracratic beat cells is uppergulated by PMAT using anti-rat insulin antibodies. Insulin secretion from paracratic beat cells are insulingent may be used or routinely modified to test for stimulation of insulins exerction from paracratic beat cells by polypepticals of the invention funding authodies and agonists or fategories of the invention form paracratic beat cells by polypepticals of the invention form paracratic cells that may be used according to which is herein incorporated by reference in its entirety. Pracretatic cells that may be used according to which is herein incorporated by reference in its entirety. Pracretatic cells that may be used according to these assays are publicly available (e.g., through the ATCO 20 ador may be routinely generated. Exemplary paracratic cells that may be used according to these assays include at a transplantable cells are a semi-adherent cell in established from cells solar of the monocytes are publicly available (e.g., through the ATCO 20 ador may be routinely medical and controlled and propertions of the invention of including antibodices and agonists or antagonists of the invention of cytokines production. Exemplary			<del></del>
HDPSB18 1028 5	Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell and functional activities.	ulin tion tion ceatic	tion of 1 and 2 sgulati c
HDPSB18			
121		HDPSI	HDPS
		121	121

				art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
	HDPSP01	1029	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
122	HDPSP01	1029	Insulin Secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon,

insulin, which is stimulated by glucose and ATTC# CRL-1777 Refs: Lord and tal. Acad. Sci. USA 78: 4339-4343, 1981.  regulate cell proliferation, activation, or tely modified to assess the ability of ists or antagonists of the invention) to s. Exemplary assays for JNK kinase activity duced activity of polypeptides of the fthe invention) include the assays disclosed a et al., Exp Cell Res 247(2): 495-504  Thang and Karin, Nature 410(6824):37-40  500 (1999); the contents of each of which are cells that may be used according to these mplary endothelial cells that may be used abundance of the include, but are not el, and immune cell extravasation.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or Caspase Apoptosis. Assays for caspase apoptosis of the invention (including antibodies and aroutinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote caspase protease-mediated apoptosis. Apoptosis in apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Loweth, AC, et al., FEBS Lett, 400(3):285-8 (1997); Saini, KS, et al., Biochem Mol Biol Int, in: Loweth, AC, et al., FEBS Lett, 400(3):285-8 (1997); Saini, KS, et al., Biochem Mol Biol Int, Diabetes, 50 Suppl 1:S44-7 (2001); Suk K, et al., J Immunol, 166(7):4481-9 (2001); Tejedo J, et al., Diabetes, 50 Suppl 1:S44-7 (2001); Suk K, et al., J Immunol, 166(7):4481-9 (2001); Tejedo J, et al., Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic cells that may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic beta cell may be used according to these assays include dransplantable rat islet cell tumor. The cells insulinoma cell line derived from a radiation induced transplantable rat islet cell tumor. The cells
somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucoson and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981. Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells which line venous blood vessels, and are involved in functions that include, but are not endothelial cells which line venous blood vessels, and are involved in functions that include, but are not imited to angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	Caspase Apoptosis. Assays for caspase agonists or antagonists of the invention) to pancreatic beta is associated with induction pancreatic beta is associated with induction apoptosis that may be used or routinely minvention (including antibodies and agoni in: Loweth, AC, et al., FEBS Lett, 400(3) 39(6):1229-36 (1996); Krautheim, A., et a Diabetes, 50 Suppl 1:S44-7 (2001); Suk FEBS Lett, 459(2):238-43 (1999); Zhang, Lett 485(2-3): 122-126 (2000); Nor et al., Atheroscler Thromb 3(2): 75-80 (1996); treference in its entirety. Pancreatic cells; available (e.g., through the ATCC) and/of may be used according to these assays im insulinoma cell line derived from a radiate produce and secrete islet polypeptide hor
Activation of Endothelial Cell JNK Signaling Pathway.	Regulation of apoptosis in pancreatic beta cells.
1030	1030
HDPSP54	HDPSP54
123	123

				glucagon. ATTC: #CRL-2057 Chick et al. Proc. Natl. Acad. Sci. 1977 74:628; AF et al. Proc. Natl. Acad. Sci. 1980 77:3519.
123	HDPSP54	1030	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL.5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
124	HDPSU13	1031	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
125	HDPTD15	1032	Activation of	Assays for the activation of transcription through the API response element are known in the art and may

			transcription through AP1 response element in immune cells (such as T- cells).	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell
125	HDPTD15	1032	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
125	HDPTD15	1032	Activation of transcription through GAS response element in immune cells (such as Tells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et

				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
125	HDPTD15	1032	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and adonists or antagonists of the invention) to regulate the serum response factors the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
125	HDPTD15	1032	Activation of transcription through CD28 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
126	HDPTK41	1033	Activation of transcription through cAMP response	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely

126 HE	HDPTK41	-	cells).	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J
<u> </u>	)PTK41			Immunol 161(2):659-663 (1998), the contents of each of which are field in the polaries of received the entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
		1033	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory
				modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate arts below cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
				for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test
		*****		immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening
				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., I Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998);
		-		Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
				the contents of each of which are herein incorporated by reference in its enurely. Truman 1 cens that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known.
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
		•		preactivated to enhance responsiveness to immunomodulatory factors.
127 HI	HDPUG50	1034	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
			3	antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB
		****	cAMP	transcription factors, and modulate expression of genes involved in a wide variety of cell functions.
			response element in	Exemplary assays for transcription through the CAML response element that had be used of fourthery modified to test cAMP-response element activity of polypeptides of the invention (including antibodies.

			immune cells (such as T- cells).	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
128	норин26	1035	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 373-L1 cells. 373-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 373 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
128	Н <b>D</b> РUH26	1035	Activation of transcription through cAMP response element in immune cells (such as Teells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell

line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for EKK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le intended Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 373-L1 cells. 373-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 373 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-Known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring calcium flux are well-known in the art and may be used or rounitely incomes assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely
	Activation of Adipocyte ERK Signaling Pathway	Activation of transcription through serum response element in immune cells (such as T-cells).	Stimulation of Calcium Flux in pancreatic beta cells.
	1036	1036	1036
	HDPUW68	HDPUW68	HDPUW68
	129	129	129

				modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-601 (1995); Mogami H, et al., Endocrinology, 136(7):2960-6 (1995); Richardson SB, et al., Biochem J, 288 ( Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec;10(8):535-41 (1989), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
129	HDPUW68	1036	Activation of Skeletal Mucle Cell PI3 Kinase Signalling Pathway	Kinase assay. Kinase assays, for example an GSK-3 kinase assay, for PI3 kinase signal transduction that regulate glucose metabolism and cell survivial are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cells that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and striated fibers after culture in differentiation media.
	норун60	1037	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodics and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are

inhibit UNN Neterninal kinase phosphorylation of TUN Neterninal kinase and failure of predhisolone to inhibit UNN Neterninal kinase phosphorylation of The Contents of each of which are berein incorporated by reference in its entitety.  HDPWN93 1038 Activation of Kinase assay. NR and p38 kinase assays for signal transduction that regulate cell proliferation. Endothelia ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) including antibodies and agonists or antagonists of the invention) including antibodies and agonists or antagonists of the invention) including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al. Bio Chem 379(8-9): 101-110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410(682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410(682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410(682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410 (682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410 (682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410 (682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410 (682): 37-47 (20): 495-504 (1999); Kyriadis JM, Biochem Soc Symp 64:29-48 (1999); Chag and Karin, Nature 410 (682): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (20): 37-34 (2					Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 pr 1):565-74: and Sousa AR et al. "In vivo resistance to corticosteroids in bronchial asthma is
HDPWN93 1038 Activation of Endothelial Cell p38 or JNK Signaling Pathway.  HDQHD03 1039 Upregulation of CD152 and activation of T cells					associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation. J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.
HDQHD03 1039 Upregulation of CD152 and activation of T cells	131	HDPWN93	1038	Activation of Endothelial Cell p38 or	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
HDQHD03 1039 Upregulation of CD152 and activation of T cells				JNK Signaling Pathway.	to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
HDQHD03 1039 Upregulation of CD152 and activation of T cells					the assays disclosed in Forrer et al., Biol Chem 3/9(6-9):1101-1110 (1990); Cupia et al., Exp Cen Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of
HDQHD03 1039 Upregulation of CD152 and activation of T cells					each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells
HDQHD03 1039 Upregulation of CD152 and activation of T cells					that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include,
HDQHD03 1039 Upregulation of CD152 and activation of T cells					but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
<b>4</b>	132	нронр03	1039	Upregulation of CD152	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
٠ <u>ــــ</u>				and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
				activation of T cells	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintigolical homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and activation of T cells. Such assays that may be used or routinely modified to test immunomodulator activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2000); McC (2					may be used or routinely modified to assess the ability of polypeptides of the invention (including
immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and activation of T cells. Such assays that may be used or routinely modified to test immunomodulator activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McC					antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
activation of T cells. Such assays that may be used or routinely modified to test immunomodulator activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McC					immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4 204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McC					activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4 204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McC					activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCo					invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
					204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al. Imminol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999);

and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used to routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IA, IL 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are isolated from cord blood.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cens and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques
	JC J	of
	Production of IL-10 and activation of T-cells.	Production MCP-1
	1039	1040
	н <b>D</b> QHD03	HDTBP04
	132	133

				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
133	HDTBP04	1040	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. But a IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
133	HDTBP04	1040	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
134	HDTEK44	1041	Production of IFNgamma using Natural	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2; promotes IgG2a and inhibits IgE; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins

ry activities and inhibit TH2 helper agonists of the invention) to te TH2 helper cell function, and/or est for immunomodulatory proteins, and the activation of T cells. dulatory activity of polypeptides of nivention) include the assays in Lab Anal 8(5):225-233 (1995); Rev Immunol 15:749-795 (1997), of which are herein incorporated according to these assays are echniques disclosed herein or ar lymphocytes that have cytotoxic interests and also	in the coll-mediated cytotoxicity.  It is been linked to  S2 may lead to impaired  in the maintenance of T cell  cells are well known in the art and s of the invention (including the activation of T cells, maintain T  Exemplary assays that test for markers, such as CD152, and the fied to test immunomodulatory nnists or antagonists of the J Biomolecular Screening 4:193- apter 6:138-160 (2000); McCoy et in Immunol 11(3):294-300 (1999); sed according to these assays may the art. Human T cells are primary
produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (FNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Natural Killer (NK) cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic otherwise known in the art.	activity but do bind antigen. INR cells show antibody-independent harming of the cell-mediated cytotoxicity. Tecognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity. CD152 EMAT. CD152 (a.k.a. CTLA4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Char Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary.
produces cell func polypept mediate mediate evaluate Such ass the inverse disclose a practic Billiau e and Rhe by refer publicly otherwis	recognic CD152 negative hyperprimmunc homeos may be antibodi cell hon immunc activati activati activity inventic 204 (19 al., Imm and Saii incorpo be isola
Killer cells	Upregulation of CD152 and activation of T cells
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	HDTEN81
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Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  Production of ICAM-1	transcription through NFAT response element in immune cells (such as natural killer cells).  1044 Production of ICAM-1
element in immune cells (such as natural killer cells).  Production of ICAM-1  Production of IL-6	element in immune cells (such as natural killer cells).  1044 Production of ICAM-1  1045 Production of IL-6
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on and differentiation and inocutation monodulatory proteins evaluate the illation of T cell proliferation and flied to test immunomodulatory and ntibodies and agonists or antagonists lecular Screening 4:193-204(1999); 160 (2000); and Verhasselt et al., J erein incorporated by reference in its assays may be isolated using endritic cells are antigen presenting cytokines, initiate and upregulate T	ERK signal transduction that and may be used or routinely ling antibodies and agonists or activation, and differentiation.  The standard of test ERK kinasees and agonists or antagonists of the (9(8-9): 1101-1110 (1998); Kyriakis 410(6824): 37-40 (2001); and Cobb feach of which are herein by be used according to these assays killer cells that may be used (for example, NK-YT cells which	and is considered to be a lifterentiation; promotes IgG2a and MHC expression. Assays for egulate a variety of inflammatory e art and may be used or routinely ding antibodies and agonists or e inflammatory activities, modulate mnunity. Exemplary assays that test s, such as Interferon gamma (IFNg),
agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis IM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.	IFN gamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg).
agonists or antagonists of the invention) to T cell proliferation and function. Exempla production of cytokines, such as IL-6, and functional activities. Such assays that may diffferentiation activity of polypeptides of of the invention) include assays disclosed Rowland et al., "Lymphocytes: a practical Immunol 158:2919-2925 (1997), the conttentiety. Human dendritic cells that may be techniques disclosed herein or otherwise k cells in suspension culture, which, when a cell proliferation and functional activities.	Kinase assay. Kinase assay regulate cell proliferation or modified to assess the abilit antagonists of the invention Exemplary assays for ERK induced activity of polypep invention) include the assay JM, Biochem Soc Symp 64, MH, Prog Biophys Mol Bic incorporated by reference it are publicly available (e.g., according to these assays in have cytolytic and cytotoxia	
	Activation of Natural Killer Cell ERK Signaling Pathway.	Production of IFNgamma using a T cells
	1046	1047
	HDTMK50	HE2DY70
	139	140

				and the activation of T cells. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening
-				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000);
				Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
			,	the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
	Y CARLO CLAR	9,0		preactivated to enhance responsiveness to immunomodulatory factors.
141	HEZEN04	1048	Activation of	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or
			Simeling	apoptosis are well known in the art and may be used or routinely modified to assess the ability of
			Dothway in	prospectuates of the invention activation and anothers. Exemplary ascave for INK kinase activity
			immune cells	that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the
			(such as	invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed
			eosinophils).	in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504
			•	(1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40
				(2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these
				assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are
				recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover,
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate signal
				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or
				cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun
				NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp
				Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric
				oxide in eosinophils" J Exp Med, Feb 2,187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
		_		inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep; 104(3 Pt 1): 565-74 (1999);
				the contents of each of which are herein incorporated by reference in its entirety.

Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
Production of ICAM-1	Activation of T-Cell p38 or JNK Signaling Pathway.	Activation of transcription through API response element in immune cells (such as Tcells).
1049	1050	1050
HE2FV03	HE2NV57	HE2NV57
142	143	143

				according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with extension extinity
143	HE2NV57	1050	Activation of transcription through cAMP response element in immune cells (such as Tcells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
143	HE2NV57	1050	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
143	HE2NV57	1050	Activation of transcription through serum response element in	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et

			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-cells).	Proc Natl Acad Sci USA 85:6342-6346 (1988); and black et al., virus Genes 12(2):103-117 (1997), use content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
143	HE2NV57	1050	Secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.  Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell seatablished from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
143	HE2NV57	1050	Activation of transcription through CD28 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according

				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce L-2 when stimulated.
144	НЕ2РD49	1051	Production of L-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
145	HE2PY40	1052	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-

204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (1874) transcription through the Nuclear Factor of Activation of response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory response in incutions. Exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene activity (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl 66:1-10 (1999); and Yeseen et al., 18 iol Chem 268(19):14285-14293 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.	Activation of Assays for the activation of transcription through the Gamma Interferon Activation-Site (GAS) response transcription through GAS response element are well-known in the art and may be used or routinely modified to go the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention factors and modulate gene expression involved in a wide variety of cell regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene decil of (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natland, J. Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used or antibodies and agonists or antagonists or antagonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene decil of (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used
	1053 H T T T T T T T T T T T T T T T T T T T	1053 /
	HE6EU50	небе 050
	HEO	HE6
	146	146

				according to these assays are publicly available (e.g. through the ATCC)
146	HE6EU50	1053	Upregulation of CD69 and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely inodified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells at may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunity and experses.
147	невмн91	1054	Activation of transcription through NFKB response element in immune cells (such as B-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gri G, et al., Biol Chem, 273(11):6431-6438 (1998); Pyatt DW, et al., Cell Biol Toxicol 2000;16(1):41-51 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the Reh B-cell line.
148	HE8QV67	1055	Production of	on of L4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T

			IL-4	cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) to incurate minimizations. stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of
				cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, 1 cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of
<del></del> _				polypeptides of the invention (including antibodies and agoilists of antagonists of the invention) including the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "I washootteer a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal
			· · · · · · · · · · · · · · · · · · ·	8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 133:257-261 (2000): and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the
				contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be
				used according to these assays may be isolated using techniques disclosed herein or otherwise known in
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
				preactivated to enhance responsiveness to immunomodulatory factors.
149	HE8UB86	1056	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
				T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" brimed buil, 30 (4): 330-309 (2000), and Cohn at al "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-
				196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2
				cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
				IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
				isolated from cord blood.
150	HE9BK23	1057	Jo u	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including

			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFK.B response	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			cells).	210.302-308 (1772), Iteliutofff et al., 1100 frait Acad Sci O3A 83.0342-9348 (1708), Diaca et al., 7 frais Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
			· ·	be used according to these assays are publicly available (e.g., through the ATCC).
150	HE9BK23	1057	Activation of	Assays for the activation of transcription through the CD28 response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells.
	-		CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			element in	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
	-		immune cells	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
		_	cells).	Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4
				responsive T cells.
151	HE9C069	1058	Upregulation	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.
			of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
			and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and
			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or
				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
				cells. Such assays that may be used or routinely modified to test immunomodulatory activity of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include,
				for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp

				Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher
		-		the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
		-		be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human I cells are primary numan lymphocytes that mature in the highlings and cypross at con- receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
		<u></u>	-	preactivated to enhance responsiveness to immunomodulatory factors.
152	HE9CP41	1059	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
!				the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
•			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells)	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
			.(2)	according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may he used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
153	HE9DC40	1060	Activation of	Assays for the activation of transcription through the AP1 response element are known in the art and may
	10000	2	transcription	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
			through AP1	and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary
			response	assays for transcription through the AP1 response element that may be used or routinely modified to test
			element in	AP1-response element activity of polypeptides of the invention (including antibodies and agonists or
			immine cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and
			(such as T-	Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			(slle)	(1988): Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol
			:/:::>>	18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
				which are herein incorporated by reference in its entirety. T cells that may be used according to these
				assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
				according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell
				line with cytotoxic activity.
153	HE9DG49	1060	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
}			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including

WO 02/102994 PCT/US02/08278

			through	antibodies and agonists or antagonists of the invention) to increase at MD and remiles (DDD
			cAMP	transcription factors, and modulate expression of genes involved in a wide variety of cell functions.
			response	Exemplary assays for transcription through the cAMP response element that may be used or routinely
			element in	modified to test cAMP-response element activity of polypeptides of the invention (including antibodies
			(such as T-	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm. Methods in Enzymol 216:362-368 (1992). Henthorn et al. Proc Natl Acad Sci.
			cells).	USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J
	-			Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its
				entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell
153	HEODGAO	1060	A ctivation of	line, which is a suspension culture of LL-2 dependent cytotoxic T cells.
551	111111111	3	transprintion	Assays for the activation of transcription through the Camma Interferon Activation Site (CAS) response
			through GAS	element are well-known in the art and may be used or routinely modified to assess the ability of
			CAD lignound	polypeptudes of the invention (including antibodies and agonists of antigonists of the invention) to
			response	regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
				reference in its entirety. Exemplary mouse T cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these
				assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
153	HE9DG49	1060	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that

				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
153	HE9DG49	1060	Activation of transcription through	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells.
			CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			element in	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998). Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6322-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
			cells).	Immunol 100(4):243/-2443 (2001); and Duscher et al.; J Diol Choll 3(1):322-350 (1):35, and Communol for each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the JUKKAT cell line, which is a suspension culture of reukelina cells that produce IL-2 when stimulated.
154	HE90W20	1901	Activation of	Kinase assay. Kinase assays, for examplek Elk-1 kinase assays, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to
			Muscle Cell	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for
			Signalling	ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
				the assays disclosed in Forrer et al., Biol Chem 3/9(8-9):1101-1110 (1998); Le Marchand-Brustel 1, Exp
				Clin Endocrinol Diabetes 10/(2):120-132 (1999); hyriakis JM, Diocilciii 300 331110 04:27-48 (1999);
				500 (1999): the contents of each of which are herein incorporated by reference in its entirety. Rat
				myoblast cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary rat myoblast cells that may be used according to these assays include L6 cells. L6 is
				an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form
		_		multinucleated myotubes and striated fibers after culture in differentiation media.
154	HE90W20	1901	Upregulation	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.
			of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
			and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and
			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including

				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher
				and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
155 H	HE9RM63	1062	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
		_	NFKB	modulate expression of epithhelial genes. Exemplary assays for transcription through the NFKB
	•		response	response element that may be used or routinely modified to test NFKB-response element activity of
			element in	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
			epithelial	assays disclosed in: Kaltschmidt B, et al., Oncogene, 18(21):3213-3225 (1999); Beetz A, et al., Int J
				Radiat Biol, 76(11): 1443-1453 (2000); Berger et al., Gene 66: 1-10 (1998); Cullen and Malm, Methods in
			HELA cells).	Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle
				Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995);
				and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by
				reference in its entirety. Epithelial cells that may be used according to these assays are publicly available
		•		(e.g., through the ATCC). Exemplary epithelial cells that may be used according to these assays include
$\dashv$				the HELA cell line.
156 E	HEAAR07	1063		Assays for the activation of transcription through the cAMP response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB
			cAMP	transcription factors, and modulate expression of genes involved in a wide variety of cell functions.
			response	Exemplary assays for transcription through the cAMP response element that may be used or routinely
			element in	modified to test cAMP-response element activity of polypeptides of the invention (including antibodies

			$\vdash$	Berger et al., Gene 66:1-10
			such as T-	and agonists of antagonists of the missing management of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco
			cells).	USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Beikowski et al., J
				entirety. T cells that may be used according to these assays are publicly available (e.g., through the
		· · · · · · · ·		ATCC). Exemplary mouse T cells that may be used according to these assays include the CILL cell line, which is a customerion culture of IL-2 dependent cytotoxic T cells.
157	HEB A F88	1064	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
ì	2007	5	transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
		•		antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB
			cAMP	transcription factors, and modulate expression of genes involved in a wide variety of cell functions.
			response	Exemplary assays for transcription through the cAMP response element that may be used of routinely
			element in	modified to test cAMP-response element activity of polypeptides of the invention (including anniconies
			immune cells	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 00:1-10
			(such as T-	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Ivatt Acad Sci
		-	(sile)	USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J
			.(2113)	Imminol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its
				entirery T cells that may be used according to these assays are publicly available (e.g., through the
				ATCCI. Exemplary mouse T cells that may be used according to these assays include the CTLL cell
				line which is a suspension culture of IL-2 dependent cytotoxic T cells.
150	UCBBN36	1065	Requisition of	Casnase Anontosis. Assays for caspase apoptosis are well known in the art and may be used or routinely
130	DENIGRATU	3	apontosis of	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			immine cells	antaconists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as,
			(euch as mast	for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body,
			cells)	and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an
			.(2	important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic
				disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or
				routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al.,
				J Biol Chem. 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103
				(2000):Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and
				Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein
				incorporated by reference in its entirety. Immune cells that may be used according to these assays are
				publicly available (e.g., through commercial sources). Exemplary immune cells that may be used

WO 02/102994 PCT/US02/08278

				according to these assays include mast cells such as the HMC human mast cell line
159	невсм63	1066	Activation of transcription through GAS response element in immune cells (such as eosinophils).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992), Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention of immune cells include assays disclosed and/or cited in: Mayumi M., "EoL-1, a human eosinophilic cell line" Leut Lymphoma; Jun;7(3):243-50 (1992); Bhattacharya S, "Granulocyte macrophage colony-stimulating factor and interleukin-5 stignaling in eosinophils" J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Bosinophils are a type of immune cell important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic reactions; they are recruited to tissu
159	HEBCM63	1066	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNo)

				and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
160	HEBEJ 18	1067	Activation of T-Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
161	HEEAG23	1068	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in

				its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain
				of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the arr.
161	HEEAG23	1068	Activation of Skeletal	Kinase assay. Kinase assays, for example an GSK-3 kinase assay, for PI3 kinase signal transduction that regulate glucose metabolism and cell survivial are well-known in the art and may be used or routinely
			Mucle Cell	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			PI3 Kinase	antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary
			Signalling Pathway	assays for PL3 kinase activity that may be used or routinely modified to test PL3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			•	include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al.,
				Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of
				each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cells
				that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line,
				isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and
				striated fibers after culture in differentiation media.
191	HEEAG23	1068	Upregulation	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells.
				CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with
			activation of	inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are
			T cells	well known in the art and may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of
				T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et
				al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
				Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460
				(1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells
				that may be used according to these assays may be isolated using techniques disclosed herein or
				otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus

				and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
162	HEEAJ02	1069	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic accivity.
163	HEEAQ11	1070	Regulation of viability or proliferation of immune cells (such as human eosinophil EOL-1 cells).	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of eosinophil cells and cell lines. For example, the CellTiter-Gloô Luminescent Cell Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eosinophil cell lines that may be used according to these assays are publicly available and/or may be routinely generated. Exemplary eosinophil cells that may be used according to these assays include EOL-1 Cells.
163	HEEAQ11	1070	Activation of T-Cell p38 or JNK Signaling Pathway.	Kinase assay. INK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999).

the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgE production and increases IgA production of II 6 has been linked to entringual disease.
the contents of each of which are herein incorporate used according to these assays are publicly available that may be used according to these assays include suspension-culture cell line with cytotoxic activity.	of CD71 and essential for cell proliferatio activation of Assays for immunomodulate T cells cells are well known in the a of the invention (including a activation of T cells, and/or immunomodulatory proteins activation of T cells. Such a activity of polypeptides of the invention) include, for exam 204 (1999); Rowland et al., et al., Ann Rheum Dis 52(6) reference in its entirety. Hu techniques disclosed herein lymphocytes that mature in cells mediate humoral or cells immunomodulatory factors.	1071 Production of Assays for measuri modified to assess antagonists of the in routinely modified 15(2):279-281 (200 each of which is he these assays are pu Exemplary cells that (MVEC).	1072 Production of IL-6 FMAT. IL-6 induced IgE produced induced Library induces evidenced induces evidence induces evidences.
	163 HEEAQ11 10	164 HEGAN94 10	165 HEGBS69 10

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			regulated by cytokines, growth factors, and hormones are well known in the art and may be used or regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
HEGBS69	1072	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated 1 cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention) (include, for example, the assays disclosed in Miraglia et al., Utur Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance

				responsiveness to immunomodulatory factors.
166	HELGK31	1073	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgB production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgB production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or antagonists or anta
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
166	HELGK31	1073	Production of IFNgamma using a T cells	FNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-322 (1998);

Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-k Assays for the activation of transcription through the Serum Response Element (SKE) are well-k the art and may be used or routinely modified to assess the ability of polypeptides of the inventic (including antibodies and agonists or antagonists of the invention) to regulate the serum response (including antibodies and agonists or antagonists of the invention) include assays for transcription th the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the including antibodies and agonists or antagonists of the invention) include assays disclosed in Be (including antibodies and agonists or antagonists of the invention) include assays disclosed in Be (including antibodies and agonists or antagonists of the invention) include assays disclosed in Be proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (19 Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (19 according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T according to these assays include the CTLL cell line, which is an IL-2 dependent significant of realls with cytotoxic activity.	
	Activation of transcription through serum response element in immune cells (such as Tells).	Upregulation of CD152 and activation of T cells
	1074	1075
	HELHD85	HELHL48
	167	168

				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.  These cells mediate humans or cells mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
691	HEMAM41	1076	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 128(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 188:2919-2925 (1997); and Nardelli et al., in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
169	HEMAM41	1076	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-204(1999);

Rowland et al., "Lymphocytes: a practical approach" Chapter 6138-160 (2000); and Ventasskit at al., J minunto 1182:19219-2925 (1997), the contents of each of whitch are herein incorporated by reference in its manurol 182:192-1925 (1997), the contents of each of whitch are herein incorporated by reference in its manurol 182:192-1925 (1997), the contents of each of whiteh are herein incorporated by reference in its manurol 182:192-1925 (1997), the contents of each of whiteh are herein incorporated by reference in its mancropium chapter, when cativated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities. An expension of the assays for the activation of transcription through the Serum Response Element (SRE) are woll-known in the SRE that may be used or routinely modified to assess the ability of polypeptides of the invention response characterized methods and agonists or antagonists of the invention) to regulate the serum response characterized and modulate the expression of genes involved in gowth. Exemplary assays for transcription through serum cells and modulate the expression of genes involved in gowth. Exemplary assays for transcription through serum and modulate the expression of genes involved in gowth. Exemplary assays for transcription through serum cells.  1. Gene 66:1-10 (1998); Chiller and Malim, Michods in Enzymol 216:362-368 (1992); Henthorn et al., can be continued to the content of each of which are herein incoporated by activated macroplages. T cells that according to these assays are ubblicly and land the cell special content of each of which are herein incoporated by activated macroplages. T cells that content of each of which are herein incoporated by activated macroplages. T cells that cells with cytokoxic problems, and according to these assays from the art and may be used according to these assays include the CTIL-cell line, which is an IL-2 dependent submitted of the invention of problems, and problems, and problems, and problems of the invent			
HEPAA46	Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cells in suspension and functional activities.	Activation of transcription through serum response element in immune cells (such as T-cells).	Production of TNF alpha by dendritic cells
		10.	10
171		HEPAA46	HEQAK71
		170	171

				cell proliferation and functional activities.
171	НЕQАК71	1078	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
172	邢QCC55	1079	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthapom and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
172	недссья	1079	Production of IL-13 and activation of T-cells.	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science; 282: 2261-2263 (1998), and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of

each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	CD69 FMAT. CD69 is an activation market that is expressed on activation market that is expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with CD69 is not expressed on resting T cells, and elukocytes are inflammation. Assays for immunomodulatory proteins evaluate the upregulation soft the invention) to modulate the activation of invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention of 1099); Rowland et al., "Lymphocytes: a practical approach" Chapter et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance resp	This reporter assay measures activation of the form of the NFKB response element are well-known in the line. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int
	Upregulation of CD69 and activation of T cells	Activation of transcription through NFKB response element in immune cells (such as basophils).
		1081
	HERAD40	HERAR44
	173	174

				Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.
174	HERAR44	1081	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 15(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
175	HESAJ 10	1082	Regulation of apoptosis of immune cells (such as mast cells).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
9/1	HETAB45	1083	Activation of transcription through NFKB response	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity

of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gri G, et al., Biol Chem, 273(11):6431-6438 (1998); Pyatt DW, et al., Cell Biol Toxicol 2000;16(1):41-51 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the Reh B-cell line.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or rounnely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of for immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of for immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); chshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
element in immune cells (such as B-cells).	Production of ICAM-1	Production of IL-5
	1084	1085
	HETBR16	HETEU28
	177	178

				and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
179	HETLM70	1086	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
179	HETLM70	1086	Production of MIP lalpha	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in

suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate 1 cell proliferation and functional activities.		
	Production of IL-6	Activation of Adipocyte ERK Signaling Pathway
	1086	1087
	HETLM70	HFABG18
	179	180

				of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
180	HFABG18	1087	Protection from Endothelial Cell Apoptosis.	Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis. Exemplary polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays include bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
180	HFABG18	1087	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
180	HFABG18	1087	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely

THZ hepper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IPNg.) and the activation of Test. Such assays that may be used or routinely modified to test immunomodulatory activity of polyopepides of the invention (including antibodics and agonists of managonists of the invention) include the assays disclosed in Miragila et al., I Biomolecular Screening anagonists of the invention) include the assays disclosed in Miragila et al., I Biomolecular Screening anagonists of the invention) include the assays disclosed in Miragila et al., I Biomolecular Screening anagonists of the invention) include the assays disclosed in Miragila et al., I Biomolecular Screening to the service in the activation of the service in the contents of each of which are berain incorporated by reference in its entirety. Human T cells that may be used a coroning to these assays may be isolated using techniques disclosed herein or otherwise a T Cell in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell reseptor and CD3, CD4, or CD8. These cells insertiated an invention of insulin are well-known in the art and may be used or routinely from anagonists of the invention) to simulate insulin secretion. For example, insulin secretion if measured by from anagonists of the invention) to simulate insulin secretion. For example, insulin secretion if measured by from a cell in the state of the invention of simulate insulin secretion. For example, insulin secretion if measured by from a cell in secretion in the art and may be used or routinely by from the assays disclosed in: A man agonists or the invention) include assays disclosed in: A man agonists or the invention in cells by polypepides of the invention of managonists of the invention of produced by reference in its entirety. Panceastic cells that a semi-adherent cell line established from cell sixel as a semi-adherent					modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of CD69 and activation of					TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg),
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					and the activation of T cells. Such assays that may be used or routinely modified to test
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					immunomodulatory activity of polypeptides of the invention (including annotated and above and above of the invention) include the assays disclosed in Miraglia et al., I Biomolecular Screening
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000);
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998);
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					be used according to these assays may be isolated using techniques disclosed herein or otherwise known
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a 1 Cell
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
HFABH95 1088 Stimulation of insulin secretion from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of					preactivated to enhance responsiveness to immunomodulatory factors.
of insulin secretion from pancreatic pancreatic beta cells.  HFABH95 1088 Upregulation of activation of	181	HFARH95	1088	Stimulation	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely
rom from from pancreatic pancreatic beta cells.  HFABH95 1088 Upregulation of activation of	101		}	of insulin	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
from pancreatic beta cells.  HFABH95 1088 Upregulation of activation of				secretion	antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
pencreatic beta cells.  HFABH95 1088 Upregulation of activation of				from	FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
heta cells.  HFABH95 1088 Upregulation of activation of				nancreatic	glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
HFABH95 1088 Upregulation of activation of				heta cells.	Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
HFABH95 1088 Upregulation of activation of					pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
HFABH95 1088 Upregulation of activation of					invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li,
HFABH95 1088 Upregulation of activation of		-			M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995);
HFABH95 1088 Upregulation of activation of					and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of
HFABH95 1088 Upregulation of activation of					which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to
HFABH95 1088 Upregulation of activation of					these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
HFABH95 1088 Upregulation of activation of					Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1
HFABH95 1088 Upregulation of activation of					cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable
HFABH95 1088 Upregulation of activation of					insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose
HFABH95 1088 Upregulation of activation of					inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
of CD69 and activation of	181	HFABH95	1088	Upregulation	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells.
				of CD69 and	CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with
				activation of	inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are

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T cells well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).
	1089
	HFAMB72
	182

				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.
183	HFAMH77	1090	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
183	IFAMH77	1090	Production of IFNgamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise Rnown in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell

				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
184	HFCCQ50	1601	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., J Immunol 18(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
184	HFCCQ50	1601	Production of IL-4	IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, modulate immune cells, such as B cells, T cells, macrophages and cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in

				the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
184	<b>Н</b> FCCQ50	1601	Activation of transcription through NFKB response element in immune cells (such as the Jurkat human T cell line).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
184	HFCCQ50	1091	Activation of transcription through GAS response element in immune cells (such as monocytes).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gustafson KS, et al., J Biol Chem, 271(33):20035-20046 (1996); Eilers A, et al., Immunobiology, 193(2-4):328-333 (1995); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary immune cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the U937 cell line, which is a monocytic cell line.
185	HFCDK17	1092	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and

				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
187	HFFAD59	1094	Regulation of transcription via DMEF1 response element in adipocytes and pre-adipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., M.A. bidlod Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.
187	HFFAD59	1094	Activation of	Assays for the activation of transcription through the AP1 response element are known in the art and may

			transcription through AP1 response element in immune cells (such as T- cells).	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
187	HFFAD59	1094	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
188	HFFAL36	1095	Activation of transcription through AP1 response element in immune cells (such as Teells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these

				assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
188	HFFAL36	1095	Activation of transcription through serum response element in immune cells (such as Teells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
189	HFGAD82	1096	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Assays for the activation of transcription through the API response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4.
189	HFGAD82	9601	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from

tion of I I I I I I I I I I I I I I I I I I	Upregulation HLA-DR FMAT. MHC class II is essential for correct presentation of HLA-DR PMAT. MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid of HLA-DR arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins and activation of expressed on MHC class II expressing T cells and antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
1097 Produc IL-10 a downre on of immun respon	1097 Upred of HI and active T cel
HFIIN69	HFIIN69
061	190

HFIIZ70 HETIZ70 Hinase assay. JMK kinase assays for signal transduction that regulate cell proliferation promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for immune cells promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for immune cells that may be used or routinely modified to test JMK kinase-induced activity of polype invention (including antibodies and agonists or antagonists of the invention) include in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 24 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents herein incorporated by reference in its entirety. Exemplary cells that may be used assays include eosinophils. Eosinophilis are important in the late stage of altergic reacrexemplary assays including antibodies and agonists or antagonists of the invention) to mod transduction, cell proliferation, activation, or apoptosis in eosinophils include assays cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and manual kinase and p38 mitogen-activated protein kinase in human eosinophils in manual contract in the late of the invention of the secend of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the s		·			cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchit associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3)	191	HFIIZ70	1098	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Elinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions, they are recruited to tissues and mediate the inflammatory response of late stage of allergic reactions, they are recruited to tissues and mediate the inflammatory response of late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage of allergic reactions; they are invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils. Texp Med; Feb 2:187(3):4115-25 (1998); J Allergy Clin Immunol 1999 Sep:104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JU

Karsan and Harlan. J. Atheroscler Thromb 3(2): 73-80 (1990); the contents of easil of which are the incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.  192 HFKET18 1099 Activation of Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and agonists of the invention (including modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention include assays disclosed in Breger et al., Proc Natl 66:1-10 (1998); Cullen and Mahm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl 66:1-10 (1998); and Yeseen et al., Bio Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of or toutinely modified to assess the ability of polypeptides of the invention (including neutibules).

			Signaling Pathway.	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays
			·	are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.
193	HFLNB64	1100	Production of IL-5	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability
				of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate be cell Ig production, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
				for immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agolists of antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening
				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori
				et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koming et al., Cytokine 9(6):42/436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells
				that may be used according to these assays may be isolated using techniques disclosed herein or
				and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
701	UEOV A 73	1101	Production of	immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.  A seave for production of II - 10 and activation of T-cells are well known in the art and may be used or
	C/VV) III	1011	IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of T-cells.	agonists or antagonists of the invention) to sumulate or innibit production of L-10 and/of activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
		•		and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:  Religious DS et al "Th-2 cycleines in alleroic disease" Br Med Bull: 56 (4): 956-968 (2000), and
				NOURISON, DO, et al., Till Sylvanics in minghy encours and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities of the sylvanics and activities and activities and activities and activities are activities and activities and activities and activities and activities and activities and activities and activities are activities and activities and activities are activities and activities and activities are activities and activities and activities are activities and activities and activities are activities and activities and activities are activities and activities and activities are a

				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
195	HFOXB13	1102	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Assays for the activation of transcription through the API response element are known in the art and may Assays for the activation of transcription through the API response element that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists or transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell line that also responds to IL-4.
961	HFPAC12	1103	Regulation of apoptosis of immune cells (such as mast cells).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used of contractly modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or outinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., J Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are

				publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
197	HFPA071	1104	Production of IL-8 by immune cells (such as the human EOL-1 eosinophil cells)	Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human eosinophil cell line) are well known in the art (for example, measurement of IL-8 production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. IL8 is a strong immunomodulator and may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).
197	HFPA071	1104	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Chang and Karin, Nature 410(6824):37-40 (1999); Kyriakis JM, Biochem Soc Symp 64:20-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of cited in: Chang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of 2001; Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2:187(3):415-25 (1998); Allergy Clin Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2:187(3):415-25 (1998); Allergy Clin Immunol; Sep:104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronc
197	HFPA071	1104	Production of	

			IL-8 by by	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely
			cells (such as	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			Umbilical	as human umbilical vein endothelial cells (HUVEC). HUVECs are endothelial cells which line venous
			Cord	blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular
			Endothelial	permeability, vascular tone, and immune cell extravasation. Elidoulchar cells pray a process fire in the individual process and nemetical of inflammation and secretion of IL-8 may play an important role in
			Cells).	recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.
198	HFPCX09	1105	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
			TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
				fincluding antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al TRiomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chanter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., I Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
198	HFPCX09	1105	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
<u>}</u>			transcription	line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays
			through	for the activation of transcription through the GATA3 response element are well-known in the art and
			GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
·			element in	modulate expression of mast cell genes important for immune response development. Exemplary assays
			immune cells	for transcription through the GATA3 response element that may be used or routinely modified to test
			(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or

WO 02/102994

			cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell line stablished from the peripheral
198	HFPCX09	1105	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Tumer et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
199	HPPCX36	1106	Activation of transcription through NFKB response element in immune cells	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol

624	202	HFTBM50	1108	Production of ICAM-1 Insulin Secretion	reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).  Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al. FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.  Exemplary scale that may be used according to these assays include microvascular endothelial cells (MVEC).  Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agoinsts or antagonists of the invention) to stimulate insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.  Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H, et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28):1654-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein in incorporated by reference in its entirety. Pancratic cells that may be used according to these assays include HTT15 Cells. HTT15 are an adherent epithelial c
	202	HFTBM50	1109	Production of IL-10 and activation of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
				T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate L-10

				are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
206	HFXDJ75	1113	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the API response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.
206	HFXDJ75	1113	Activation of transcription through CD28 response element in immune cells (such as Tcells).	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
206	HFXD175	1113	Activation of transcription through NFKB	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the

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NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.		
response element in immune cells (such as T-cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Production of ICAM-1	Production of TNF alpha by dendritic
	1114	1115	1116
	HFXDN63	HFXGT26	HFXGV31
	207	208	209

			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 18(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
210	HFXHD88	1117	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance

211	HFXJU68	1118	Activation of transcription through cAMP	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a
			response element	3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway.  CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
			(CRE) in pre- adipocytes.	contains the binding sequence for the transcription factor CKEB (CKE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to
				test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen
				and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 83:0342- 6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety.
				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the
				to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a
				continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-
				adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
211	HFXJU68	1118	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics, 88: 18/-
				196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				Exemplary cells that may be used according to these assays include 1h2 cells. IL10 secreted from 1h2
				cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of 1 cells that secrete
				LA, LL10, LL13, LL5 and LL6. Factors that induce differentiation and activation of Th2 cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
				isolated from cord blood.
212	HFXKJ03	1119	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in

			transcription through serum response element in immune cells (such as natural killer cells).	the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1998); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
213	HFXKY27	1120	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
213	HFXKY27	1120	Activation of transcription through GAS response element in immune cells (such as T-	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene

			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
214	НGВFО79	1121	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.
214	HGBFO79	1121	Proliferation of immune cells (such as the HMC-1 human mast cell line)	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of eosinophil cells and cell lines. For example, the CellTiter-Gloô Luminescent Cell viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Mast cells are found in connective and mucosal tissues throughout the body. Mast cell activation (via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines) is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Mast cell lines that may be used according to these assays include HMC-1, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
215	HGBHE57	1122	Upregulation of CD71 and activation of T cells	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the

				activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
216	HGBIB74	1123	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary at natural killer cells that may be used according to these assays are publicly
216	HGBIB74	1123	Activation of transcription through GAS response element in immune cells (such as Teclls).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl

Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used to exercise to these assesses are emplicity available (e.g., through the ATCC).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention
	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Activation of transcription
	1123	1123	1124
	HGBIB74	HGBIB74	HGLAL82
	216	216	217

			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
		-	serum response	and modulate the expression of genes involved in growin. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			such as T-	al., Gene 00:1-10 (1996); Cullen and Maim, Methods III Enzylinol 210:302-306 (1992); Itolinolin et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the UILL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
218	HHAAF20	1125	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
			Natural	regulate cell proliferation or differentiation are well known in the art and may be used or routinely
			Killer Cell	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			ERK	antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
			Signaling	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
			Pathway.	induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis
				JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb
				MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein
				incorporated by reference in its entirety. Natural killer cells that may be used according to these assays
				are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used
				according to these assays include the human natural killer cell lines (for example, NK-YT cells which
				have cytolytic and cytotoxic activity) or primary NK cells.
219	HHEAA08	1126	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
			Adipocyte	regulate cell proliferation or differentiation are well known in the art and may be used or routinely
			ERK	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			Signaling	antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
			Pathway	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le
				Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc
				Symp 64:29 48 (1999); Chang and Karin, Nature 410(6824):37 40 (2001); and Cobb MH, Prog Biophys
				Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in
				its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available

<del></del>		
(e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Production of RANTES	Of CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD132 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired activation of mununoresponses. Assays for immunomodulatory proteins important in the maintenance of T cells may be used or routinely modified to assess the ability of polypeptides of the invention including antibodies and agonists or antagonists of the invention of cell surface markers, such as CD152, and the immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention include, for example, the assays disclosed in Miraglia et al., Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., Biomolecular Screening 4:193-invention) and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may be used according to these assays may are activated by reference in its entirety. Human T cells that may be used according to these assays may are activated and according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to t
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	HHEAA08	HHEAA08
	219	219

human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the cAMP response element are well-known in the art
	Production of MIP Ialpha	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Activation of
	1127	1128	1129
	HHEBB 10	ннема 59	HHEMA75
	220	221	222

and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, bind to CREB transcription factor, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66.1-10 (1998); Cullen and Malm, Methods in Enzymol 216.362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-634 (1998); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the AP1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell
transcription through cAMP response element in immune cells (such as T- cells).	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Activation of transcription through AP1 response element in immune cells (such as Teells).
	1129	1129
	HHEMA75	HIEMA75
	222	222

WO 02/102994 PCT/US02/08278

				Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of
				each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.
222	HHEMA75	1129	Activation of transcription through CD28	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate L-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response element in immune cells (such as Teclls).	indultied to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cuilen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
222	HHEMA75	1129	Activation of transcription through GAS	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription forces and modulate game expression involved in a wide society of cell
			element in immune cells (such as T-cells).	functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998). Cullen and Malm. Methods in Enzymol 216:362-368 (1992): Henthorn et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
222	HHEMA75	1129	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT)
			through NFAT	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory

response functions. Exemplary assays for transcription through the NFAT response element and through the NFAT response dement and through in the NFAT response dement and through in the NFAT response dement and through in the NFAT response dement and through in the NFAT response dement and through in the NFAT response dement activity of polypeptides of the invention (including parts of the invention) include assays disclosed in Berger et al., General General (1999); and Yesene et al., 1818 (Dem 260); parage et al., 1818 (Dem 260); parage et al., 1818 (Dem 260); parage et al., 1818 (Dem 260); parage et al., 1818 (Dem 260); parage et al., 1819 (Dem 260); parage et al., 1819 (Dem 260); parage et al., 1819 (Dem 260); parage et al., 1819 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (Dem 260); parage et al., 1810 (D										$\neg$
HHEMA75 1129 A LI LI LI LI LI LI LI LI LI LI LI LI LI					herein incorporated by reference in its entirety. I can that may be used according to publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T		<del></del>	functions. Exemplary assays for transcription through the NFA1 response cientein that the functions functions in a continuous continuous functions. Exemplary assays for transcription (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including routinely modified routinely modified to the invention (including routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely modified routinely mod		
HHEMA75 1129	response element in immune cells (such as T-cells).	Activation of transcription	through NFKB response element in	immune cells (such as T-cells).		Activation of	transcription through NFAT	response element in	immune cell:	natural killer cells).
		1129				1129				
222		HHEMA75				HHEMA75				
		222				222				

				and Yeseen et al., J Biol Chem 208(19):14283-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and
				cytotoxic activity.
223	HHEMM74	1130	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB
	_		cAMP	transcription factors, and modulate expression of genes involved in a wide variety of cell functions.
			response	Exemplary assays for transcription through the cAMP response element that may be used or routinely
			element in	modified to test cAMP-response element activity of polypeptides of the invention (including antibodies
			immune cells	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
-			(such as T-	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			cells).	USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J
				Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its
				entirety. T cells that may be used according to these assays are publicly available (e.g., through the
			•	ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell
				line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
224	HHENK42	1131	Production of	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or
	-		IL-13 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of
			T-cells.	T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of
				polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include,
				for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13
				independently of IL-4 in Experimental asthma" Science;282: 2261-2263 (1998), and Wills-Karp M, et al.,
				"Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of
				each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used
				according to these assays include Th2 cells. IL13, a Th2 type cytokine, is a potent stimulus for mucus
				production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that
				secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells
				play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated
				from cord blood.
225	HHENP27	1132	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,

			TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			T cells	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the shility of polymentides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity, and mediate humoral and/or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an
				inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including announces and agomess of antaconists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt
				et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998);
				Verhasselt et al., J Immunol 158:2919-2925 (1997), and Nardelli et al., J Leukoc Biol 65:822-828 (1999),
				the contents of each of which are herein incorporated by reference in its entirety. Human I cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell
				receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
				preactivated to enhance responsiveness to immunomodulatory factors.
226	HHEN022	1133	Production of	L-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
	,		IL-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
-				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
				Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting

				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
227	HHEPD24	1134	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 186(7):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3885-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
227	HITEPD24	1134	Production of MIP lalpha	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in

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suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
		Jc
	Production of MCP-1	Production of IL-6
-	1134	1134
	HHEPD24	HHEPD24
	227	227

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techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
<u> </u>		
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
	1135	1135
	ннерм33	ннерм33
	228	228

reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFAT signaling pathway in HML-1 flurnal flast cell flats been linked to cytokine and chemokine production. Assays for the activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci (1998); and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
	Activation of transcription through NFAT response element in immune cells (such as mast cells).	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).
	1135	1135
	ннерм33	нерм33
	228	228

				ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
228	<b>Н</b> ЕРМ33	1135	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
228	<b>ННЕРМ33</b>	1135	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NR cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human natural killer cell line with cytolytic and cytotoxic activity.
228	ннермзз	1135	Activation of transcription through serum response	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely

			element in immune cells (such as natural killer cells).	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells
				that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
229	HHEPT60	1136	Activation of transcription through NFKB	Assays for the activation of transcription through the NFKB response element are wen-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response element in immune cells	NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as natural killer	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 20/3):838,844 (1999), the contents of each of which are herein incorporated by reference in its
			Cells).	entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary NK cells that may be used according to these assays include the NK-YT cell line,
				which is a human natural killer cell line with cytolytic and cytotoxic activity.
230	HHEPU04	1137	Production of TNF alpha by dendritic	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis lactor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may he used or continely modified to test immunomodulatory activity of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al. Thiomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
_				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference

				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
230	HHEPU04	1137	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
231	HHFEC49	1138	Production of IFNgamma using a T cells	ENgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or

				antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening
				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000);
				Gonzalez et al., J. Clin Lab Anai o(2):223-233 (1772), Diniau et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999),
				the contents of each of which are herein incorporated by televiness thinks charge, a content of otherwise known be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human T Ch3 Ch3 Ch3 Ch3 Ch3 Ch3 Ch3 Ch3 Ch3 Ch3
				preactivated to enhance responsiveness to immunomodulatory factors.
232	HHFGR93	1139	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
. —			NFKB	modulate expression of epithnelial genes. Exemplarly assays for transcription in organization of epithnelial genes.
			element in	polymentides of the invention (including antibodies and agonists or antagonists of the invention) include
			enithelial	assavs disclosed in: Kaltschmidt B. et al., Oncogene, 18(21):3213-3225 (1999); Beetz A, et al., Int J
			cells (such as	Radiat Biol, 76(11):1443-1453 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in
			HELA cells).	Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle
				Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995);
				and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by
				reference in its entirety. Epithelial cells that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary epithelial cells that may be used according to these assays include
				the HELA cell line.
232	HHFGR93	1139	Calcium flux	Assays for measuring calcium flux are well-known in the art and may be used of incurring the
			in immune	assess the ability of polypeptides of the invention (including antibodies and agonists of antagonists of the
			cells (such as	invention) to mobilize calcium. Cells normally have very low concentrations of cytosonic carcium
			monocytes)	compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium,
				leading to activation of calcium responsive signaling pathways and alterations in cell functions.
_				Exemplary assays that may be used or routinely modified to measure calcium flux in immune cells (such
				as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther. 209(3):891-890
				(1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 14(2)
_				589-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of
				which is herein incorporated by reference in its entirety. Cells that may be used according to these assays
				are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that

				Le cond concerding to those occour include the TUP. I monocute cell line
233	HHFHJ59	1140	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
233	HHFHJ59	1140	Upregulation of HLA-DR and activation of T cells	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
233	HHFHJ59	1140	Upregulation	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is

essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides and activity of polypeptides of the activity of polypeptides and activity of polypeptides of the activity of polypeptides and activity of polypeptides and activity of polypeptides and activity of polypeptides and activity of polypeptides of the activity of polypeptides and activity of polypeptides and activity of polypeptides and activity of polypeptides and activity of polypeptides and activity of polypept	CD69 FMAT. CD69 is an activation marker that is expressed on activated 1 cells, b cells, and the CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with cD69 is not expressed on resting T cells, B cells, and leukocytes are inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and that may be used according to these assays may be isolated using techniques disclo
of CD71 and activation of T cells	Upregulation of CD69 and activation of T cells
	1140
	HHFHJ59
	233

233	ннғн159	1140	Production of IL-10 and	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-
				196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				Exemplary cells that may be used according to these assays include 1nz cells. ILTO secreted from 1nz
				Cells ling be incasured as a marker of this cell acuration.  If 4. If 10, If 13. If 5 and If 6. Factors that induce differentiation and activation of The cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
				generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes
				isolated from cord blood.
234	HHFHR32	1141	Production of	L-6 FMAT. L-6 is produced by T cells and has strong effects on B cells. L-6 participates in L-4
			IL-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
		_		Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.

	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat InS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.	
Activation of Natural Killer Cell ERK Signaling Pathway.	Stimulation of insulin secretion from pancreatic beta cells.	Production of ICAM-1
1142	1143	1143
HHF0J29	нндсм76	HHGCM76
235	236	236

				each of which is herein incompared by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells
237	HHGDEIK	1144	Activation of	(MVEC). Assays for the activation of transcription through the Serim Response Flement (SRF) are well-known in
<u> </u>	2		transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
_			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
		-		culture of T cells with cytotoxic activity.
237	HHGDF16	1144	Activation of	Assays for the activation of transcription through the AP1 response element are well-known in the art and
			transcription	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through AP1	antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions.
			response	Exemplary assays for transcription through the API response element that may be used or routinely
			element in	modified to test API-response element activity of polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988),
			(such as T-	Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA
			cells).	85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell
				Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of
				each of which are herein incorporated by reference in its entirety. Human T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that
	_			may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive
				suspension-culture cell line.
238	HHGDW43	1145	Activation of	Assays for the activation of transcription through the AP1 response element are well-known in the art and
			transcription	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through AP1	antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions.
			response	Exemplary assays for transcription through the AP1 response element that may be used or routinely
			element in	modified to test API-response element activity of polypeptides of the invention (including antibodies and

agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
immune cells (such as T-cells).	Production of IL-10 and activation of T-cells.	Production of IL-10 and activation of T-cells.
	1145	1146
	HHGDW43	ниресо9
	238	239

				IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
240	HHPGO40	1147	Proliferation of immune cells (such as the HMC-1 human mast cell line)	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of eosinophil cells and cell lines. For example, the CellTiter-Gloô Luminescent Cell Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Mast cells are found in connective and mucosal tissues throughout the body. Mast cell activation (via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines) is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Mast cell lines that may be used according to these assays are publicly available and/or may be routinely generated. Exemplary mast cells that may be used according to these assays include HMC-1, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
240	HHPGO40	1147	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
240	HHPGO40	1147	Upregulation of CD69 and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of

activation of T cells. Solus assays that may be used or routinely modified to test immunomodulatory activation of T cells. Solus assays that may be used or routinely modified to test immunomodulatory activation of propeptides of the invention (including antibodies and agoinsts or anagonists of the invention) include. Solve example, the sassy disclosed in Minglia et al., I Biomolecular Screening 4:193–104 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:181–105 (2000); Ferencal of al., I Autoimmun 14(1):63-78 (200); Werete et al., Allegy 32(4):465-469 (1997); Taylor-Fishwick and Siegel. Lul Immunol 22(10;3215-321 (1995); and Afetta et al., Ann Rheum 19s 52(6):457-460 (1993), the contents of each of which are breat incorporated by reference in its entirely. Human 7 cells and express as T Cell roceptor and CD3. CD4. or CD8. These cells meditate burnors on cell-mediated immunity and may be presentwated to enflance responsiveness to immunomodulatory factors.  241 HHPTIGS 1148 Regulation of Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be bused or cample and captures at T Cell roceptor and CD3. CD4. or CD8. These cells meditated burnors on cell-mediated immunity and may be presentwated to enflance responsiveness to immunomodulatory factors.  241 HHPTIGS 1148 Regulation of Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or cample and express at T Cell roceptor of properative and more cells (such as mass of recample, immunocolls immunity and may be used or cample in mass cells. Ansat cells are found in compress and sponsiss or anigoniss or anigoniss or anigoniss or anigoniss or anigonis or anigonis or anigonis or district and may be used or cample and agonisis or anigonis or anigonism or finate cell special approach and agonisis or anigonis or anigonism or finate cell special and agonism or anigonism or anigonism or anigonism or anigonism or anigonism or anigonism or anigonism or anigonism or anigonism or anigonism or ani					T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					204 (1999), Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000), Ferenczi et
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Atetra et al., Ann Kheum Dis 52(6):457-460
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  Cells).  HHSDX28 1149 Activation of transcription through serum response element in					(1993), the contents of each of which are herein incorporated by reference in its entirety. Human 1 cells
HHPTJ65 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					that may be used according to these assays may be isolated using techniques disclosed nerein or
HHPTJ65 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					otherwise known in the art. Human I cells are primary numan lymphocytes that marties in the unitaries
HHPTJ65 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate numoral of cell-incurated
HHPT165 1148 Regulation of apoptosis of immune cells (such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in					immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
apoptosis of immune cells (such as mast cells).  Cells).  HHSDX28 1149 Activation of transcription through serum response element in	241	HHPT165	1148	Regulation of	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely
HHSDX28 1149 Activation of transcription through serum response element in	: -		!	apoptosis of	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
(such as mast cells).  HHSDX28 1149 Activation of transcription through serum response element in				immine cells	antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as,
HHSDX28 1149 Activation of transcription through serum response element in				(euch as mast	for example in mast cells. Mast cells are found in connective and mucosal tissues throughout the body,
HHSDX28 1149 Activation of transcription through serum response element in				cells)	and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an
HHSDX28 1149 Activation of transcription through serum response element in				./6	important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic
HHSDX28 1149 Activation of transcription through serum response element in					disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or
HHSDX28 1149 Activation of transcription through serum response element in					routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including
HHSDX28 1149 Activation of transcription through serum response element in					antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al.,
HHSDX28 1149 Activation of transcription through serum response element in	-	•			J Biol Chem. 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103
HHSDX28 1149 Activation of transcription through serum response element in					(2000). Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and
HHSDX28 1149 Activation of transcription through serum response element in					Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein
HHSDX28 1149 Activation of transcription through serum response element in					incorporated by reference in its entirety. Immune cells that may be used according to these assays are
HHSDX28 1149 Activation of transcription through serum response element in					publicly available (e.g., through commercial sources). Exemplary immune cells that may be used
HHSDX28 1149 Activation of transcription through serum response element in					according to these assays include mast cells such as the HMC human mast cell line.
transcription through serum response element in	242	HHSDX28	1149	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
.s	!			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
.9				through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
				serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
				response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
		-		element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et

			immune cells	al Gene 66:1-10 (1998): Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
242	HHSDX28	1149	Production of	
			TNF alpha by	
			dendritic	
			cells	
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
	_			Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
242	HHSDX28	1149	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
			transcription	line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays
			through	for the activation of transcription through the GATA3 response element are well-known in the art and
			GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
			element in	modulate expression of mast cell genes important for immune response development. Exemplary assays
			immune cells	for transcription through the GATA3 response element that may be used or routinely modified to test
			(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
			cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
				Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
				(1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al.,

				according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
245	HJABX32	1152	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for arample, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
246	HJACA79	1153	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell

				and finational activities
248	HJACG30	1155	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
248	HACG30	1155	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used of rounterly modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat InS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
249	HJBAVSS	1156	Production of MIP1alpha	MIP-Ialpha FMAT. Assays for immunomodulatory proteins produced by activated denutric cens trait upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the

				production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
250	HJBCU04	1157	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
250	HJBCU04	1157	Production of IL-4	IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include

the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Serum Kesponse Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1998); Benson et al., Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for production of IL-10 and activation of 1-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells and IL6. Factors that induce differentiation and activation of Th2 cells play a
the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193 "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonz 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford contents of each of which are herein incorporated by reference in its er used according to these assays may be isolated using techniques disclothe art. Human T cells are primary human lymphocytes that mature in receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription througher and may be used or routinely modified (including antibodies and agonists or antagonimodulate the expression of genes involved in in many cell types. Exemplary assays for transomified to test SRE activity of the polypeptic antagonists of the invention) include assays dimantagonists of the invention) include assays dimantagonists of the invention) 153(2-368 (19) (1988); Benson et al., J Immunol 153(9):3862 (1997), the content of each of which are hereif be used according to these assays are publicly that may be used according to these assays in cell line with cytolytic and cytotoxic activity.	Assays for production of IL-10 and act coutinely modified to assess the ability agonists or antagonists of the invention I'-cells. Exemplary assays that may be and antibodies of the invention (includ production and/or T-cell proliferation Robinson, DS, et al., "Th-2 cytokines: Cohn, et al., "T-helper type 2 cell-direction in the contents of each of whe Exemplary cells that may be used accells may be measured as a marker of cells may be measured as a marker of the II of II I in II II I and II in II II I and II in III II I and III.
2: 801 0 3 1 1 1		Production of IL-10 and activation of T-cells,
	1158	1159
	HJMBI18	HJMBN89
	251	252

major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incoporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human
	Production of MIP1alpha	Upregulation of CD71 and activation of T cells
	1160	1160
	HJMBT65	HJMBT65
	253	253

<del></del>			
lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliteration, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly
	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Il p38 or ling uling vay.	Production of IL-6
	Activation transcriptic through NFKB response element in immune ce (such as T cells).	Activa T-Cell JNK Signall Pathwa	Prodi
	1161	1162	1162
	HJMBW30	HJPAD75	HIPAD75
	254	255	255

own in the art and may be used or ention (including antibodies and lation and differentiation and modulate mnunomodulatory proteins evaluate the regulation of T cell proliferation and nodified to test immunomodulatory and g antibodies and agonists or antagonists molecular Screening 4:193-204(1999); 38-160 (2000); and Verhasselt et al., J e herein incorporated by reference in its see assays may be isolated using n dendritic cells are antigen presenting for cytokines, initiate and upregulate T	ter element are well-known in the art ypeptides of the invention (including e the FAS promoter element in a yme for lipogenesis. FAS promoter is n increases FAS gene transcription in omewhat glucose dependent.  FAS promoter element activity (in es and agonists or antagonists of the Acad Sci U.S.A., 97(8):3948-53 (2000); 1B, et al., Biochem J, 317 ( Pt 1):257-65. Methods in Enzymol. 216:362-368 iference in its entirety. Hepatocytes that ublicly available (e.g., through the tes that may be used according to these xoorticoids, insulin, or cAMP	to activated T cells. CD152 is a ssion has been linked to
regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as L6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the regulation of transcription through the FAS promoter element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in livers of diabetic mice. This stimulation of transcription is also somewhat glucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 ( Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 in negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
	Regulation of transcription through the FAS promoter element in hepatocytes	Upregulation of CD152
	1162	1163
	HIPAD75	HKAAE44
	255	256

re well known in the art and article well known in the art and article of T cells, maintain T plary assays that test for arts, such as CD152, and the test immunomodulatory or antagonists of the omolecular Screening 4:193-or 138-160 (2000); McCoy et and CD3. CD4, or CD8. Thuman T cells are primary r and CD3, CD4, or CD8. and CD3, CD4, or CD8. and CD3, CD4, or CD8. and CD3, CD4, or CD8. and CD3, CD4, or CD8. and codulatory proteins evaluate to enhance chemotaxis, and hodulatory proteins evaluate rotein (MCP), and the nely modified to test article (MCP), and the nely modified to test article (MCP), and the nely modified to test article (MCP), and the nely modified to test article (MCP), and the nely modified to test article (MCP), and the nely modified to test article (MCP) in the article of Verhasselt et al., J Immunoled by reference in its entirety. Solated using techniques solated using techniques antigen presenting cells in its entirety.	on b cens. L-o parucipates in L-6; a role in mucosal immunity). L-6
homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and any be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells. maintain T activation and agonists or antagonists of the immunoral or cell-including antibodies and agonists or antagonists of the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are brerain incorporated by reference in its entirely. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary be isolated using techniques disclosed herein or otherwise known in the art. Manna T cells are primary be isolated using techniques disclosed herein or otherwise known in the art. Manna T cells are primary be isolated using techniques disclosed herein or otherwise and T cells are well known in the art and may be act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess that arise modulates immunomodulatory and diffferentiation activity of polypeptides of the invention of monocytes and T cells. Such ass	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-0 participates in IL-6 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
T cells Production of MCP-1	Production of IL-6
1164	1164
HKAAH36	НКААН36
257	257

		—¬
induced IgE production and increases IgA production (IgA plays a role in mucosal infinumularly). Included IgE production and increases IgA production (IgA plays a role in mucosal infinumum disease, induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, differentiation factor proteins produced by a large variety of cells where the expression level is strongly differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays tisclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate to entire the profiferation and functional activities.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used of noticely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote caspase protease-mediated apoptosis. Induction of apoptosis in endothelial cells supporting the vasculature of tumors is associated with tumor regression due to loss of tumor blood supply. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Lee et al., FEBS Lett 485(2-3): 122-126 antagonists of the invention) include the assays disclosed in Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. To-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. To-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. To-80 (1996); the contents of each of which are assays are publicly available (e.g., through bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular tone, and immune cell extravasation.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 Cens (14, 17, 17) response element are well-known in the art and may be used or routinely modified to assess the ability of
Π-6	Endothelial Cell Apoptosis	Activation of transcription
	1166	1166
	HKAB184	HKABI84
	259	259

			through	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response in	regulate INFA.1 utilisational factors and inodulate expression of genes involved in infinite consociatory functions. Exemplary assays for transcription through the NFAT response element that may be used or
			immune cells	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			(such as 1 -	difficulties and agoiness of an agentials of the invention include assays discussed in Deager of any October 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
				Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Yeseen et al., J Biol Chem 268(19):14283-14293 (1993), the contents of each of which are
				problem incorporation by reference in its entriety. I could may be used according to most used, as the publicity available (e.g., through the ATCC). Exemplary human T cells that may be used according to
				these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce
259	HKABI84	1166	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as T-	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
				be used according to these assays are publicly available (e.g., through the ATCC).
260	HKABZ65	1167	Production of	L-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
			L-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of 1 cell proliferation and

functional activities. Such assays that may be used or routinely modified to test immunoncounatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al., "J Rowland et al.	X 8 4 5 3 5 7 7 4 9 9 5 3 5	Į
	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Regulation of apoptosis in pancreatic beta cells.
	1167	1167
	HKABZ65	HKABZ65
	260	260

				Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic beta cell insulinoma cell line derived from a radiation induced transplantable rat islet cell tumor. The cells produce and secrete islet polypeptide hormones, and produce insulin, somatostatin, and possibly glucagon. ATTC: #CRL-2057 Chick et al. Proc. Natl. Acad. Sci. 1977 74:628; AF et al. Proc. Natl. Acad. Sci. 1980 77:3519.
261	HKACB56	1168	Myoblast cell proliferation	Assays for muscle cell proliferation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins-4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation" J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells" J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.
261	HKACB56	1168	Production of IL-5	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000);

			and activation of T cells	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
262	HKACD58	1169	Regulation of transcription via DMEF1 response element in adipocytes and preadipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23): 14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21): 16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be

				routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous
				substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.
262	HKACD58	1169	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1998); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
263	HKACM93	1170	Activation of transcription through GAS response element in immune cells (such as eosinophils).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate gene expression (commonly via STAT transcription factors) involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by reference in its entirety. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in: Mayumi M., "EoL-1, a human eosinophilic cell line" Leuk Lymphoma; Jun;7(3):243-50 (1992); Bhattacharya S, "Granulocyte macrophage colony-stimulating factor and interleukin-5 activate STAT5 and induce CISI mRNA in human peripheral blood eosinophils" Am J Respir Cell Mol Biol; Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in

				eosinophils" J Biol Chem; Oct 20;275(42):33167-75 (2000); the contents of each of which are herein
				incorporated by reference in its currenty. Exempliary consultation are according to measure include eosinophils. Eosinophils are a type of immune cell important in the late stage of allergic
				reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation,
				normally a direct consequence of interleukin or other cytokine receptor stimulation (e.g. IL3, IL5 or GMCSF).
263	HKACM93	1170	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
			transcription	element are well-known in the art and may be used or routinely modified to assess the ability of
			through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
				reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used
				according to these assays are publicly available (e.g., through the ATCC).
263	HKACM93	1170	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as T-	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
			•	herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
-				be used according to these assays are publicly available (e.g., through the ATCC).
564	HKADQ91	1171	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of $ m IL{-}10$ and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides

and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic discase" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	L5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4-cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate B cell Ig production, modulate be cosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory proteins evaluate the production of cytokines, such as L5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
	Production of IL-5	Activation of Natural Killer Cell ERK Signaling
	1172	1173
	HKAEG43	HKAEL80
	265	266

induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ohtani KI, et al., Endocrinology, 139(1):172-8 (1998); Krautheim A, et al, Exp Clin Endocrinol Diabetes, 107 (1):29-34 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells transformed with SV40. Which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.	Assays for the activation of transcription through the API response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of
Pathway.	Regulation of viability and proliferation of pancreatic beta cells.	Activation of transcription through AP1 response element in immune cells (such as T-cells).
	1174	1174
	HKAEV06	HKAEV06
	267	267

268 HKAFK41 1	1175	Production of ICAM-1 IL-6	according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.  Masays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Antheroxclerosis, 149(1):99-110 (2000); Panetiteir RA Jr, et al., J Immunol. 154(5):238-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be used according to these assays are about a strong the saccording to these assays are about a strong to the saccording to the saccording to the saccording to the saccording to the saccording to the saccording to the saccording to polypeptides of the invention to finding antibodies and differentiation activity of polypeptides of the invention in the art and may be used or outinely modified to assess the ability of polypeptides of the invention of cytokines, such as IL-6, and the stimulation and upregulation activity of polypeptides of the invention including antibodies and agonists of the invention)
269 HKDBF34 1	1176	Activation of	cell proliferation and functional activities.  Assays for the activation of transcription through the NFKB response element are well-known in the art

			transcrintion	and may be used or routinely modified to assess the ability of nolynemides of the invention fincluding
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as T-	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
				be used according to these assays are publicly available (e.g., through the ATCC).
270	HKGAT94	1177	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
			Natural	regulate cell proliferation or differentiation are well known in the art and may be used or routinely
			Killer Cell	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			ERK	antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
			Signaling	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
			Pathway.	induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis
				JM. Biochem Soc Symp 64:29-48 (1999): Chang and Karin. Nature 410(6824):37-40 (2001); and Cobb
				MH. Prog Biophys Mol Biol 71(3-4):479-500 (1999): the contents of each of which are herein
				incomorated by reference in its entirety. Natural killer cells that may be used according to these assays
				ore articly available (a a through the ATC). Evenment and afficient all that may be used
				are publicly available (e.g., intough title ATCC). Exemiplary hattural Killer cens tilla had be used
	-			according to these assays include the human natural Killer cell lines (for example, NK-Y I cells which
			,	have cytolytic and cytotoxic activity) or primary NK cells.
271	HKGC027	1178	Production of	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and
_			GM-CSF	fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors
				and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF
				plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen
	-			presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory
				proteins that promote the production of GM-CSF are well known in the art and may be used or routinely
				modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation
				of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of
				cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely
				modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and

1180 Production of
Ivita taipiia
agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the
production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to
and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
(2000); Satthaporn and Eremin, J R Coll Surg Ednb 43(1):9-19 (2001); Drakes et al., 1 ransp infinance (2001) (2001); 17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol
65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.
Human dendritic cells that may be used according to these assays may be isolated using techniques
disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
proliferation and functional activities.
ction of
tion of
T-cells. T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides

				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of Tells that secrete
				IL4, IL10, IL13, IL2 and IL6. Factors that induce differentiation and activation of 1112 certs play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
275	HKMLK53	1182	Activation of JNK	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of
			Signaling Pathway in	polypeptides of the invention (including announces and agonists of antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or continely modified to test INK kinase-induced activity of polypeptides of the
			(such as	invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504
				(1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40
				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these
				assays include eosinophils. Eosinophils are important in the late stage of affergic reactions, they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover,
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal
				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun
				NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils." Clin Exp
				Immunol; Oct, 122(1):20-7 (2000); Rebestrell rt, et al., Distuption of las receptor signature of muto oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
			•	associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
				unhibit JUN N-terminal Kinase phosphorylation. J Alietgy Clin Infinunci; Sep; 104(3 rt 1):303-74 (1232), the contents of each of which are herein incorporated by reference in its entirety.

276	HKMLP68	1185	Activation of transcription through serum response element in immune cells (such as T-cells).  Production of IL-6	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Cane 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2): 105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays are lude the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.  IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperpoliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention and differentiation and unction. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of Cytokines, such as IL-6, and the stimulation and produced assays disclosed herein evaluate to 118-1060; and ve
279	HLCND09	1186	Upregulation of CD152 and	CD152 FMAT. CD152 (a.k.a. CTL.A.4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired

li. S			activation of T cells	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
HLDBX13 1187 Production of TNF alpha by dendritic cells				may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
HLDBX13 1187 Production of TNF alpha by dendritic cells	<del></del>	<del>.</del>		immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory certification of the contract of an appropriate of the
HLDBX13 1187 Production of TNF alpha by dendritic cells		·		activity of polypeptides of the inveltion (including antibodies and agonises of antibodies) invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et
HLDBX13 1187 Production of TNF alpha by dendritic cells				al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(2):234-200 (1999), and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
HLDBX13 1187 Production of TNF alpha by dendritic cells	<u>-</u>			incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
HLDBX13 1187 Production of TNF alpha by dendritic cells				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
HLDBX13 1187 Production of TNF alpha by dendritic cells				These cells mediate humoral or cell-mediated immunity and may be preactivated to chimatice responsiveness to immunomodulatory factors.
	$\vdash$	╁一	Production of	<u>i</u>
			INF alpha by	
to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	, , <u>, , , , , , , , , , , , , , , , , </u>		cells	
(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 188:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	·			to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
(including antibodies and agonists or antagonists of the invention) include assays discussed in paraginal al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 188(-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 188:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				(including antibodies and agonists or antagonists of the invention) include assays discussed in validation of 1 Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
in its entirety. Human dendritic cells that may be used according to these assays had be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by relevence
cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.				In its entirety. Human dendritic cells that may be used according to litese assays may be isolated using
cell proliferation and functional activities.				cells in suspension culture. which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.

280	HLDBX13	1187	Activation of Endothelial	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the
,			Cell p38 or	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			JNK Signaling	to promote or innibit ceil proliteration, activation, and apoptosis. Exemplary assays for JINA and pao kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of
			Pathway.	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
				the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res
				247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature
				#10(0024):3/40 (2001), and Coop Mil, 110g Brophys and Blot /1(24):4/2/500 (1222), and concerns of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells
				that may be used according to these assays include human umbilical vein endothelial cells (HUVEC),
				which are endothelial cells which line venous blood vessels, and are involved in functions that include,
				but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
281	HLDON23	1188	Regulation of	Assays for the regulation of transcription through the PEPCK promoter are well-known in the art and
			transcription	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through the	antibodies and agonists or antagonists of the invention) to activate the PEPCK promoter in a reporter
			PEPCK	construct and regulate liver gluconeogenesis. Exemplary assays for regulation of transcription through
			promoter in	the PEPCK promoter that may be used or routinely modified to test for PEPCK promoter activity (in
			hepatocytes	hepatocytes) of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in
				Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Lochhead
				et al., Diabetes 49(6):896-903 (2000); and Yeagley et al., J Biol Chem 275(23):17814-17820 (2000), the
				contents of each of which is herein incorporated by reference in its entirety. Hepatocyte cells that may be
				used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary liver hepatoma cells that may be used according to these assays include H4lle
				cells, which contain a tyrosine amino transferase that is inducible with glucocorticoids, insulin, or cAMP
				derivatives.
281	HLDON23	1188	Production of	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely
			VCAM in	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
•			endothelial	antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure
			cells (such as	the upregulation of cell surface VCAM-1 expresssion in endothelial cells. Endothelial cells are cells that
			human	line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis,
			umbilical	vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that

may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	7 1 31 3 27 5	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 numan mass cenline. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
vein endothelial cells (HUVEC))	Production of ICAM-1	Production of IL-10 and activation of T-cells.	Activation of transcription through GATA-3 response
	1188	1188	1189
	HLDON23	HLDON23	HLDOW79
	281	281	282

			element in immune cells (such as mast cells).	modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
282	HLDOW79	1189	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cell sthat may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
282	HLDOW79	1189	Activation of transcription through AP1 response	Assays for the activation of transcription through the API response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely

			alament in	modified to test API-response element activity of polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA
			cells).	85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):49864993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of
	•			each of which are herein incorporated by reference in its entirety. Human T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that
				may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive
				suspension-culture cell line.
282	HLDOW79	1189	Activation of	Assays for the activation of transcription through the CD28 response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in 1 cells.
			CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			element in	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
			immune cells	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
			cells).	Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4
				responsive T cells.
282	HLDOW79	1189	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT)
			transcription	response element are well-known in the art and may be used or routinely modified to assess the ability of
			through	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			NFAT	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
			response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
			element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
		_	immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
		_	(such as T-	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
			cells).	Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
				Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are
				herein incorporated by reference in its entirety. T cells that may be used according to these assays are

				publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
282	HLDOW79	1189	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
283	H.DQC46	1190	Activation of transcription through serum response element in immune cells (such as Teells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
284	HLDQR62	1191	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and

				proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
284	HLDQR62	1191	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
285	HLDQU79	1192	Regulation of viability and proliferation of pancreatic beta cells.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly

			CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			element in	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
			immune cells	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
			cells).	Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4
_				responsive T cells.
286	HLDRM43	1193	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
) 			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
_			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			Tcells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et
				al., Immunol Cell Biol 77(1):1-10 (1999), Oostervegal et al., Сит Opin Immunol 11(3):294-300 (1999);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
_				incorporated by reference in its entirety. Human T cells that may be used according to these assays may
				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
286	HLDRM43	1193	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate serum response factors and
			serum	modulate the expression of genes involved in growth and upregulate the function of growth-related genes

			response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or
			(such as	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			natural killer	(1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
			cens).	(1997), the conferm of each of which are noted in the polared by reference in its chiracy. I could may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells
				that may be used according to these assays include the NK-YT cell line, which is a human natural killer
787	HI DRP33	1194	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
3		:	transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
-			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
288	HLHFP03	1195	Activation of	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation,
			T-Cell p38 or	activation, or apoptosis are well known in the art and may be used or routinely modified to assess the
			JNK	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
		-	Signaling	to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays
			Pathway.	for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-
				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et
				al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and
				Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999);
				the contents of each of which are herein incorporated by reference in its entirety. T cells that may be
				used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells
				that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent
				suspension-culture cell line with cytotoxic activity.

				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention fine line and aconists or antaconists of the invention) include assays disclosed in Miradia et
			•	al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"  Chanter 6:138-160 (2000): Verhasselt et al. Fur I Immunol 28(11):3886-3890 (1198): Dahlen et al. I
				Immunol 160(7):385-3593 (1998), Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 03:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
		·		cell proliferation and functional activities.
290	HLBD68	1197	Production of	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that
			MPIalpha	upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and
				modulate 1 cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of enemovances, such as macrophage inflammatory protein 1 alpha (MIF-1a), and the activation of monocutes/macrophage and T calls. Such accove that may be used or routingly modified to
				activation of monocytes macrophages and 1 cens. Such assays that may be used of founding inounitied to
				test innimization and chemicitatis activity of polypeptices of the invention (including annocates and agonists of antagonists of the invention) include assays disclosed in Miraplia et al. I Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol
				8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol
				65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.
		_		Human dendritic cells that may be used according to these assays may be isolated using techniques
				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
		_		suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
				proliferation and functional activities.
290	HLIBD68	1197	Production of	L-6 FMAT. L-6 is produced by T cells and has strong effects on B cells. L-6 participates in L-4
			IL-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and

			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			element in	the SNE that may be used of fourmery modified to test SNE acuarity of the polypophuses of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			(such as T-	an, Ocac Oc. 1-10 (1976), Curien and Mann, Methods in Englino 210, Oc. 200 (1972), Reminding an, Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. I cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
	_			may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with corotoxic activity
291	HLICQ90	1198	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
	,		TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
				(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
291	HLICQ90	8611	Stimulation	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to
			of Calcium	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
			Flux in	invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium.
			pancreatic	Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular
			beta cells.	calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive
				signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely
				modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-

				601 (1995); Mogami H, et al., Endocrinology, 136(7):2960-6 (1995); Richardson SB, et al., Biochem J, 288 ( Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec;10(8):535-41 (1989), the
				contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be
				used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				HITTIS are an adherent epithelial cell line established from Syrian hamster islet cells transformed with
				SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete
				insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids.
				ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. 178A 78: 4339-4343, 1981.
791	HLICO90	1198	Stimulation	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely
; ;	· ·	)	of insulin	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			secretion	antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
			from	FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
			pancreatic	glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
			beta cells.	Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
				pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li,
	.54			M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995);
				and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of
				which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1
				cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable
				insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose
				inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
292	HLJBJ61	1199	Activation of	Assays for the activation of transcription through the GATA3 response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
			GATA-3	modulate expression of genes important for Th2 immune response development. Exemplary assays for
			response	transcription through the GATA3 response element that may be used or routinely modified to test
			element in	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
			immune cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
			(such as T-	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346

			cells).	(1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the HT2 cell line, which is a suspension culture of IL-2 dependent T cells that also respond to IL-4.
293	HLMBO76	1200	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., I Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
294	HLMCA59	1201	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell

				proliferation and functional activities.
295	нгове09	1202	Production of IL-8 by	Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human eosinophil cell line) are well known in the art (for example, measurement of IL-8
			immune cells	production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the
			(such as the	invention (including antibodies and agonists or antagonists of the invention) to promote of infiniti.  Fosinophils are a tyre of immine cell important in allergic responses: they are recruited to tissues and
			1 eosinophil	mediate the inflammtory response of late stage allergic reaction. IL8 is a strong immunomodulator and
			cells)	may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).
295	нгове09	1202	Upregulation	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is
			of CD71 and	essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating.
			activation of	Assays for immunomodulatory proteins expressed on activated 1 cells, is cells, and most proliterating
			r cells	of the invention (including antibodies and agonists or antagonists of the invention) to modulate the
				activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra
				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by
				reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human
				lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
				cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
				immunomodulatory factors.
596	нгорн79	1203	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			L-10 and	routinely modified to assess the ability of polypeptides of the invention (incliding antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of LL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-

				196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
297	HLQDR48	1204	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
297	HLQDR48	1204	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" (Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 188:2919-2925 (1997); and Nardelli et Immunol 160(7):3585-3593 (1998); Verhasselt et al., Immunol 188:2919-2925 (1997); and Nardelli et

				art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
539	HLTAU74	1206	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
299	HLTAU74	1206	Activation of Natural Killer Cell ERK Signaling Pathway.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.
300	HL.TCO33	1207	Production of IL-10 and downregulati on of immune	IL-10 FMAT. Assays for immunomodulatory proteins produced by activated T cells, B cells, and monocytes that exhibit anti-inflammatory activity and downregulate monocyte/macrophage function and expression of cytokines are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, and modulate immune cell

			responses	function and cytokine production. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-10, and the downmodulation of immune responses. Such assays
				that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Mirrolli, at a 1 Riomological Screening 4-103-204 (1999); Rowland et al., "Lymphocytes; a practical
				approach" Chapter 6:138-160 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of
				each of which are herein incorporated by reference in its entirety. Human T cells that may be used
				art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell
				receptor and CD3, CD4, or CD6. These cells inequate fluitoral of cell-inequated intitioning and final per preactivated to enhance responsiveness to immunomodulatory factors.
301	HLTDV50	1208	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely
			ICAM-1	angeonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J,
				15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of
				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary cells that may be used according to these assays include microvascular endothelial cells
900	7 M. W. T. C.	9	3	(111 V ID.).
305	HL1EJU6	1209	Activation of	Assays for the activation of transcription unough the scient response Eremon (55.52) are not the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
303	HLTFA64	1210	Production of	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a
			IFNgamma	proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2; promotes IgU2a and inhibits IgE;

			using Natural Killer cells	induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or
			- · · ·	mediate numoral of cell-mediated inmunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells.
				Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of
				disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes:
				a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995);
				and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incomporated
				by reference in its entirety. Natural Killer (NK) cells that may be used according to these assays are
				publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or
				otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic
				activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also
				recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
304	HLTHG37	1211	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
			transcription	(STAT6) response element are well-known in the art and may be used or routinely modified to assess the
			through	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			STAT6	to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	test STAT6 response element activity of the polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998);
			(such as 1-	Cullen and Maim, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Nati Acad Sci USA
			cells).	83:0342-0346 (1988); Georas et al., Blood 92(12):4329-4338 (1998); Morratt et al., Transplantation 60(7):1531-1531-1534 (2000); Ouriel et al., Bur I Immunol 27(8):1082-1087 (1007); and Macuda et al. I Biol
				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which
				is a suspension culture of IL-2 and IL-4 responsive T cells.
302	HLWAA17	1212	Regulation of	Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or
			ription	routinely modified to assess the ability of polypeptides of the invention (including antibodies and

			of Malic	agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in
			Enzyme in adipocytes	promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR
				response elements. ME promoter may also responds to API and other transcription factors. Exemplary assays that may he used or routinely modified to test for regulation of transcription of Malic Enzyme (in
				adipoocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1/8-91 (1996);
	1			274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1997); Berger, et
				al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents
				of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used
				according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary hepatocytes that may be used according to these assays includes the return of the liver hepatoma cell line.
305	HLWAA17	1212	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely
}			ICAM-1	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB 1,
				15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of
				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
				Exemplary cells that may be used according to these assays include microvascular endothelial cells
				(MVEC).
306	HLWAD77	1213	Activation	Assays for the activation of transcription through the Lory toplomesticke of the invention funding
			io.	and may be used of routinely involved assess the ability of polypopures of the money and
			transcription	antibodies and agoilists of antagonists of the inventory to regime. Doth the FOR
			through the	modulate expression of infinuncial and general assays to defice a contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of
			EGR (Early	response element that may be used or routinely modified to test ECIK response element activity.
			Growth	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
			Response)	assays disclosed in: Richards JD, et al., J Immunol, 166(6):3825-3864 (2001); Dinkel, A, et al., J EXP
			element in	Med, 188(12):2215-2224 (1998); and, Newton, JS, et al., Eur J Immunol 1996 Apr; 20(4):811-810 (1996),
			immune cells	the contents of each of which are herein incorporated by reference in its entirety. Infinune cells that may
_			(such as B-	be used according to these assays are publicly available (e.g., through the ATCC). Exemplary epithelial
			cells).	cells that may be used according to these assays include the Raji cell line.

307	HI.WAE!!	1214	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
}			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			immine cells	(including animbodies and agonists of antagonists of the inventory include assays argensed in perfect of al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
307	HLWAE11	1214	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et
			natural killer	al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et
			cells).	al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its
				entirety. NK cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary NK cells that may be used according to these assays include the NK-YT cell line,
-				which is a human natural killer cell line with cytolytic and cytotoxic activity.
307	HLWAE11	1214	Calcium flux	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to
			in immune	assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
			cells (such as	invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium
			monocytes)	compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium,
				leading to activation of calcium responsive signaling pathways and alterations in cell functions.
				Exemplary assays that may be used or routinely modified to measure calcium flux in immune cells (such
				as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther, 269(3):891-896
				(1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 74(2)
				589-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of

which is herein incorporated by reference in its entirety. Cells that may be used according to unese assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the THP-1 monocyte cell line.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of class and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation; induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Iss:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Iss:2919-2925 (1997), when activated by antigen and/or cytokines, initiate and upregulate T cell suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cens (147.71) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Horein incorporated by reference in its entirety. T cells that may be used according to these assays are these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce
	Production of MCP-1	Activation of transcription through NFAT response in immune cells (such as T-cells).
	1215	1215
	HLWA022	HLWA022
	308	308

WO 02/102994 PCT/US02/08278

				invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed
		•	eosinophils).	In Forrer et al., 5101 Chem 379(6-9):1101-1110 (1996), Outra et al., Exp. Con 1002 2-7(2): 135-30 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (1999); kyriakis JM, Prog Bionhys Mol Riol 71(3-4):479-500 (1999); the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these herein incorporated by reference in its entirety. Exemplary cells that may be used according to these herein incorporated by reference in the original property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of all the property of a
				assays include eosinophils. Eosinophils are important in the late stage of aircele reaction. Moreover, recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover,
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and appoints or antagonists of the invention) to modulate signal
				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or
				cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-juil
				Immunol: Oct. 122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric
				oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
				inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999);
				the contents of each of which are herein incorporated by reference in its entirety.
300	HI WAYS4	1216	Upregulation	CD152 FIMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
}			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
		-	T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD132, and the
				activation of T cells. Such assays that may be used or routinely modified to test infinitionounatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miragiae et al., J biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 0:138-100 (2000); McCog et
_				al., Immunol Cell Biol //(1):1-10 (1999); Oostervegal et al., Cult Opin innimunol 11(2):27-20 (1777);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
				monpolated by reference in its entirety. Trunian 1 cens that they be used used used they

				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are mimary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				I nese cells mediate numoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
310	HLWB163	1217	Upregulation of CD71 and	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating.
			activation of	Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating
			T cells	cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and accounts or astagonists of the invention) to modulate the
				activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the
				activation of 1 cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include for example the assays disclosed in Miraplia et al. I Biomolecular Screening 4:103.
				204 (1999): Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000): and Afetra
				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by
				reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human
				lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
				cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
				immunomodulatory factors.
311	HLWBY76	1218	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
311	HLWBY76	1218	Upregulation	Upregulation   HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.

Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1982); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomolalatory factors.	
of HLA-DR and activation of T cells	Upregulation of CD152 and activation of T cells
	1218
	HLWBY76
	311

				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
312	HLWCF05	1219	Activation of Adipocyte PI3 Kinase Signalling	Kinase assay. Kinase assays, for example an GSK-3 assays, for Pl3 kinase signal transduction that regulate glucose metabolism and cell survival are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antaconists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary
			Pathway	assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al.,
				Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be
				used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse
				mouse preadipocyte cell line that is a continous substrain of 3T3 fibroblast cells developed through clonal
				isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
. 312	HLWCF05	1219	Activation of JNK	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of
			Signaling	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			Pathway in immine cells	promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the
			(such as	invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed
<del></del>			eosinophils).	In Forrer et al., Biol Chem 3/9(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 24/(2): 493-504 (1999); Kyrjakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40
				(2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are
				recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover,
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate signal
				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or
				citéd III. Zidaig Jr., et al., Indie de Caspases in devanientassente incueve apopuses une ucon en en en

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NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils. Clin Exp. Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils." J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation." J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	Assays for the activation of transcription through the AP1 response retrient at word and activation of transcription through the AP1 response retrient at word including may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely agonists or antagonists of the invention include assays disclosed in Berger et al., Gene 66:1-10 (1988); agonists or antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci USA (25:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.		Assays for the activation of transcription through the Nuclear Factor of Activation of transcription
	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Activation of transcription through CD28 response element in immune cells (such as Tells).	Activation of
	1219	1219	1219
	HLWCF05	HLWCF05	HLWCF05
	312	312	312

response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yescen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or anapachists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate
transcription through NFAT response element in immune cells (such as T- cells).	Activation of transcription through NFKB response element in immune cells (such as Tecells).	Production of IFNgamma using a T cells
	1219	1220
	HLWCF05	HLYAC95
	312	313

TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may the oused according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for measuring secretion of insulin are well-known in the art and may be used or routine amodified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, mvention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. Insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.	
	Stimulation of insulin secretion from pancreatic beta cells.	Activation of transcription through STAT6 response
	1220	1221
	HLYAC95	HLYAF80
	313	314

			element in immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998);
			(such as natural killer	Cullen and Malm, Methods in Enzymol 210:302-308 (1992); Henthom et al., Froc Ival. Acad Sci USA (85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
			cells).	ON(1):1321-1323 (2000); Curie et al., Eur J minutol 27(0):1362-1367 (1377), and master of al., 3 2562 (Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary far haural kiner cens that may be used according to these used, and promety available (e.g., through the ATCC).
315	HLYAN59	1222	Production of	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely
			VCAM in	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			endothelial	antagonists of the invention) to regulate VCAM expression. For example, FMA1 may be used to meaure
-,			cells (such as	the upregulation of cell surface. VCAIN-1 expresssion in endouteliar cens. Endouronal cens are cens that
			numbilion .	min order vessels, and activities and immine and immine the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order of the second order or the second order of the second order of the second order of the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order or the second order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order order ord
			vein	may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which
			endothelial	are available from commercial sources. The expression of VCAM (CD106), a membrane-associated
			cells	protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of
			(HUVEC))	lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role
			:	in promoting immune and inflammatory responses.
315	HLYAN59	1222	Upregulation	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.
:			of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
			and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and
_			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including
_				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or
				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
				cells. Such assays that may be used or routinely modified to test immunomodulatory activity of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include,
				for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp
				Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher
				and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683,

Upregulation O of CD152 n and activation of it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I cells n t it I ce	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).
1222	1223
HLYAN59	HLYAZ61
315	316

				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are
				recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or
				cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp
				Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric
				oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3) Pt 1):565-74; and. Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
				inhibit IUN N-terminal kinase phosphorylation. J Allergy Clin Immunol; Sep; 104(3 Ft 1):303-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.
317	HLYBD32	1224	Activation of	Assays for the activation of transcription through the AP1 response element are known in the art and may
			transcription	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
			through AP1	and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary
			response	assays for transcription through the AP1 response element that may be used or routinely modified to test
			element in	AP1-response element activity of polypeptides of the invention (including antibodies and agonists or
		_	immune cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and
			(such as T-	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			cells).	(1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol
				18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
				which are herein incorporated by reference in its entirety. Mouse T cells that may be used according to
				these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
				according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell
				line that also responds to IL-4.
318	HMADS41	1225	Protection	Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the and may be
			from	used or routinely modified to assess the ability of the polypeptides of the invention (including announced
			Endothelial	and agonists or antagonists of the invention) to innibit caspase procease-mediated apoptosis. Exemplary
			Cell	assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis rescue of
			Apoptosis.	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include
				the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J
				Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each

of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary endothelial cells that may be used according to these assays include bovine aortic endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, 101 ENES signal databases in the graduate cell proliferation or differentiation are well known in the art and may be used or routinely regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and differentiation. Assamplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-invention) include the assays for ERK kinase activity that may be used or routinely modified to test ERK kinase invention) include the assays disclosed in Forer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis invention) include the assays disclosed in Forer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis incorporated by reference in its entirety. Rat liver hepatoma cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat liver hepatoma cells that may be used according to these assays include H4lle cells, which are known to respond to glucocorticoids, insulin, or cAMP derivatives.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used a reductive and modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or disease and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., antibodies and agonists or antagonists of the invention) include cells that may be used according to these assays are incorporated by reference in its entirety. Immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
	Activation of Hepatocyte ERK Signaling Pathway	Regulation of apoptosis of immune cells (such as mast cells).
	1225	1225
	HMADS41	HMADS41
	318	318

319	HMADU73	1226	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
				effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" (Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 18(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):385-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cell proliferation and functional activities.
319	HMADU73	1226	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using

cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T	Assays for proliferation and functional activities.  Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or Assays for production of IL-10 and activation of routinely modified to assess the ability of polypeptides of the invention (including antibodies and routinely modified to assess the ability of polypeptides T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 and antibodies of the invention include, for example, assays such as disclosed and/or cited in: production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Cohn, et al., "Th-leper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 Exemplary cells that may be used according to these assays include Th2 cells are a class of T cells that secrete cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are an event of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of th	Assays for measuring calcium flux are well-known in the art and may be used in touring incomes. Assays for measuring calcium flux are well-known in the art and may be used to measure influx of calcium. invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium, leading to activation of calcium responsive calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention) include assays disclosed in its entirety. Pancreatic cells that may be used according to these assays include HITT15 Cells. generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl.
	Production of IL-10 and activation of T-cells.	Stimulation of Calcium Flux in pancreatic beta cells.
	1226	1227
	HMADU73	HMAMI15
	319	320

				A 200 C: 175 A 78: 4330 4343 1081
			7	
320	HMAMI15	1227	gulation	CD152 FMAT. CD152 (a.k.a. C1LA-4) expression is restricted to activated 1 cells. CD152 is a
			of CD152	negative regulator of 1 cell proliferation. Reduced CD132 expression has occur innear
			and	hyperproliferative and autoimmune diseases. Overexpression of CD132 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of 1 cell
			T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain I
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
			_	activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et
		· <u>-</u>		al. Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999);
				and Saito T. Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
			•	incorporated by reference in its entirety. Human T cells that may be used according to these assays may
				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
321	HMDAE65	1228	Production of	L6 FMAT. L6 is produced by T cells and has strong effects on B cells. L6 participates in L4
			几6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4: 193-204(1999);

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			f	suppopulation de se se se se se se se se se se se se se
			nt in ne cells as T-	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10  (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			cells).	USA 85:6342-6346 (1988); Black et al., Virus Genes 13(2):103-117 (1997); and Berkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its
				entirety. T cells that may be used according to these assays are publicly available (e.g., urough une ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell
324	HMEA148	1231	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
;			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
	-		immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):103-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. I cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse 1 cens unai
				may be used according to diese assays include the CILL cell line, which is an IL-2 acrement surprised and many of T calls with extratoxic activity
				Culture of 1 coils will office the control of the Court of Activated T cells (NFAT)
325	HMECK83	1232	Activation of	Assays for the activation of transcription unough the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of t
			through	polynentides of the invention (including antibodies and agonists or antagonists of the invention) to
			NFAT	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
			response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
			element in	routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			(such as T-	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Nau
			cells).	Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
				Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Yeseen et al., J Biol Chem 208(19): 14283-14293 (1993), the contents of each of which are
				herein incorporated by reference in its entirety. T cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to
				these assays include the SUPI cell line, which is a suspension culture of LL-2 and LL-4 responsive t

Assay to measure regulation of production of interfeuring (LL-O) of carried from commercial aortic smooth muscle cells or normal human dermal fibroblasts may be obtained from commercial aortic smooth muscle cells or normal human dermal fibroblasts may be obtained from commercial aortic smooth muscle cells or normal human dermal fibroblasts may be obtained from commercial sources; these cells are important structural and functional components of blood vessels and connective tissue, respectiviely. Interleukin-6 (IL-6) is a key molecule in chronic inflammation and has been tissue, respectiviely. Interleukin-6 (IL-6) is a key molecule in chronic inflammatory and inflammatory diseases. Deregulated expression of atherosclerosis, stroke, arthritis and other vascular and inflammatory diseases. Deregulated expression of IL-6 has been linked to autoimmondulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and production of IL-6.	Assays for measuring calcium flux are well-known in the art and may be used or fouringly incurring assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):489-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):489-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):489-assays contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely used according to these assays include a publicly available (e.g., through the ATCC) and/or may be routinely which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocoticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Sa
Production of IL6 by primary human aortic smooth muscle or normal human dermal fibroblast cells (without or with costimulation with TNFalpha).	Stimulation of Calcium Flux in pancreatic beta cells.
1233	1233
нмеер18	нмеер 18
326	326
	HMEED 18 1233 Production of A IL6 by ce primary ac human aortic sc smooth til muscle or in normal human dermal factor cells (without to or with the costimulation with TNFalpha).

326	HIMEED18	1233	Upregulation of CD60 and	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, and NK cells. CD69 is not expressed on resting T cells. B cells, or NK cells. CD69 has been found to be associated with
				inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to the fact for a ctivation of
				I cells, and/or mediate numoral of cell-mediated infinumity. Exemplary assays that test for infinity in immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
	<u> </u>			activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
			_	Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Atetra et al., Ann Kheum Dis 52(6):45/400 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells
_				that may be used according to these assays may be isolated using techniques disclosed herein or
				otherwise known in the art. Human T cells are primary human lymphocytes that mature in the tnymus and express a T Cell recentor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
				immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
327	HMEET96	1234	Production of	L-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
_			IL-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
_				plasmacytolias, higelomas, and chromic hypelprometance diseases. Assays for minimum or differentiation factor proteins produced by a large variety of cells where the expression level is strongly
_				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Example to a for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
			_	functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
.—				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
			,	Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using

techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.		Kinase assay. JNK kinase assays for signal transduction that regulate cen purication, and apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to polypeptides of the invention (activation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Chang and Karin, Nature 410(6824):37-40 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are assays include eosinophils. Eosinophils are important in the late stage allergic reactions. Moreover, recruited to tissues and mediate the inflammatory response of late stage allergic reactions. They are exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention (archaes and p38 mitogen-activated protein kinase in human eosinoph
	Production of ICAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).
	1234	1235
	HMEET96	HMIAL37
	327	328

				oxide in eosinophils" J Exp Med; Feb 2:187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.
328	HMIAL37	1235	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 18/-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
329	HMIAP86	1236	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using

techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	MIP-Ialpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to ast immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell and functional activities.	1
	Production of MP lalpha	Production of MCP-1
	1236	1236
	HMIAP86	HMIAP86
	329	329

				suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
329	HMIAP86	1236	Production of IL-8 by immune cells (such as the human EOL-1 eosinophil cells)	Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human eosinophii cell line) are well known in the art (for example, measurement of IL-8 production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. IL8 is a strong immunomodulator and may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).
329	HMIAP86	1236	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
329	HMIAP86	1236	Production of IL-8 by by endothelial cells (such as Human Umbilical Cord Endothelial Cells).	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human umbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.
330	HMKCG09	1237	Regulation of viability or proliferation	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and

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of immune cells (such as human eosinophil EOL-1 cells).	Production of IFNgamma using a T cells	Production of IL-10 and activation of T-cells.
	1237	1237
	HMKCG09	HMKCG09
	330	330

				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				II.4, IL.10, IL.13, IL.5 and IL.6. Factors that induce differentiation and activation of 1n2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
			•	generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
331	HMMAH60	1238	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
			Killer Cell	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			ERK	antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
			Signaling Pathway.	induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
			,	invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis
				JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb
				MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein
				incorporated by reference in its entirety. Natural killer cells that may be used according to these assays
				are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used
				according to these assays include the human natural killer cell lines (for example, NK-YT cells which
				have cytolytic and cytotoxic activity) or primary NK cells.
331	HMMAH60	1238	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
	_			Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-
				196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
				Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2
				cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
				ILA, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a
				major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are

generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes	Ting FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, Ting FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, Ting FMAT. Assays for immunomodulatory and cytotoxic fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fibroblasts, smooth muscle, are well known in the art and may be used or routinely modified to assess the effects on a variety of cells are well known in the art and may be used or routinely modified to fibroblate inflammation and cytotoxicity. Exemplary assays that test for to mediate immunomodulation, modulate inflammation of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists of the invention) include assays disclosed by the contents of each of which are herein incorporated by reference al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen activities.	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated using the art and may be used or upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the production of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to activation of monocytes/macrophages and T cells. Such assays disclosed in Miraglia et al., J Biomolecular and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol (65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
genera	TINFa ITNFa ITNFa ITNFa ITNFa ITNFa ability to med immun immun (TNFa ITNFa ITNFa ITNFa ITNFa ITNFa ITN ITNFa ITN ITN ITN ITN ITN ITN ITN ITN ITN ITN	MIP-I upreg routin agoni modu produu activa test in and a Scree (2000 (5:82) 65:82
	Production of TNF alpha by dendritic cells	Production of MIP1alpha
		1239
	HMQDF12	НМQDF12
	332	332

suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.  Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of	polypeptides and antibodies of the invention that may be used of fourties induction to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays such as disclosed and/or cited in: Grunig, G, et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science; 282: 2261-2263 (1998), and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL-4, IL-10, IL-13, IL-5 and IL-6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" (Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
Production of LL-13 and activation of	, cells.	Upregulation of CD71 and activation of T cells
1240		1241
нморт36		HMSBX80
333		334

	<del></del>		
Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies	and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J blomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
(such as T-cells).	Production of MCP-1		Activation of transcription through cAMP response element in immune cells (such as Technical).
	1244		1245
	HMSGU01		HMSHM14
	337		338

	_		
ATCC). Exemplary mouse T cells that may be used according to these assays include the C1 LL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.	Assays for the activation of transcription intough the Schull Response Continuous that and may be used or routinely modified to assess the ability of polypeptides of the invention the art and may be used or routinely modified to the invention) to regulate the serum response factors (including antibodies and agonists or antagonists of the invention) rolling assays for transcription through and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention include assays (1992); Henthom et al., al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.		Kinase assay. JNK kinase assays for signal transduction that regulate cen promodules. Applying a apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity
	Activation of transcription through serum response element in immune cells (such as Teells).	Production of MCP-1	Activation of JNK Signaling Pathway in
	1245	1245	1246
	HMSHM14	HMSHM14	HMSHS36
	338	338	339

			immune cells	that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the
			as	invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed
·			eosinophils).	In Forrer et al., Biol Chem 3/9(8-9):1101-1110 (1996), Cupia et al., EAP Cell Acs 247(4), 737-304 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40
				(2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are begin incomparated by reference in its entirety. Exemplary cells that may be used according to these
				assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate signal
				cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun
	-			NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils. Clin Exp
				oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
-		_		associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
	_			inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999);
				the contents of each of which are herein incorporated by reference in its entirety.
339	HIMSHS36	1246	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
			transcription	(STAT6) response element are well-known in the art and may be used or routinely modified to assess the
			through	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			STAT6	to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	test STAT6 response element activity of the polypeptides of the invention (including antibodies and
	•		immune cells	agonists or antagonists of the invention) include assays disclosed in bergef et al., delie 00.1-10 (1220),
			(such as	85.6247.6346 (1988): George et al. Blood 97(12):4579-4538 (1998): Moffatt et al., Transplantation
			cells).	69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol
			<u> </u>	Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly
		]		available (e.g., through the AICC).
339	HMSHS36	1246	Activation of	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (INFA.1)

transcription response element are well-known in the art and may be used or routinely modified to assess the ability of the improvement of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention of the invention include assays disclosed in Berger et al., Clean 66:1-10 (1999), the content of each of which are therein incoporated by rece			
HMSHS36 1246			
HMSHS36	transcr throug NFAT respor eleme immun (such natura cells).		- T
		1246	
339		HMSHS36	HMSJM65
		339	340

				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
	_	<del>, _</del> _		T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of evaluate as II -6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists)
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
				Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate.
341	HMSII 168	1248	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art
:		!	transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et
			EOL1 cells).	al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et
				al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its
				entirety. For example, a reporter assay (which measures increases in transcription inducible from a
				NFkB responsive element in EOL-1 cells) may link the NFKB element to a repeorter gene and binds to
				the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune
				cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of
				eosinophils. Bosinophils are a type of immune cell important in the allergic responses; they are recruited
				to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human
				eosinophil cell line.
341	HIMSJU68	1248	Regulation of	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely
			apoptosis of	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			immune cells	antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as,
			(such as mast	for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body,
			cells).	and their activation via immunoglobulin E -antigen, promoted by T helper cell type 2 cytokines, is an

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important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Vasc Res 37(3): 209-218 (2000); and (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.	Kinase assay. Kinase assays, for example an USK-3 kinase assay, for the art and may be used or routinely regulate glucose metabolism and cell survivial are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and LIO (1998); Nikoulina et al., include assays disclosed in Forrer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and striated fibers after culture in differentiation media.	Assays for the activation of transcription through the AP1 response council and activation of transcription through the AP1 response council and activation (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test assays for transcription through the AP1 response element activity of polypeptides of the invention (including antibodies and agonists or AP1-response element activity of polypeptides of the invention (including antibodies and agonists or AP1-response element activity of polypeptides of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
	Activation of Skeletal Mucle Cell P13 Kinase Signalling Pathway	Activation of transcription through AP1 response element in immune cells (such as T-cells).
	1248	1249
	HMSJU68	HMSKC04
	341	342

according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	
	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through NFAT response element in immune cells (such as mast cells).
	1249	1249
	HMSKC04	HMSKC04
	342	342

these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the API response element are well-known in the activation of transcription through the API response element are well-known in the may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and modified to test API-response element activity of polypeptides of the invention (including antibodies and sonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the CD28 response element are work and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Cantilla interest of assess the ability of element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell regulate. Exemplary assays for transcription through the GAS response element that may be used or
	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Activation of transcription through CD28 response element in immune cells (such as Tcclls).	Activation of transcription through GAS response element in
	1249	1249	1249
	HMSKC04	HMSKC04	HMSKC04
	342	342	342

routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (INFAL) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998). Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirery. T cells that may be used according to these assays are publicly available (e.g., through the
immune cells (such as T-cells).	Activation of transcription through NFAT response element in immune cells (such as T-cells).	Activation of transcription through STAT6 response element in immune cells (such as Tells).
	1249	1249
	HMSKC04	HMSKC04
	342	342

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ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which		4 L HL G I S O T I	<del> </del>
	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum
	 1249	1249	1249
	HMSKC04	HMSKC04	HMSKC04
	342	342	342

yonists or cullen and 5:6342-6346 2):105-117 lls that may y T cells tural killer	and and ivation of ypeptides te IL-10 ited in: ), and s; 88: 187- ty. from Th2 at secrete play a are ccytes	sul-known in sition onse factors in through it invention in Berger et horn et al., (1997), the y be used et T cells that
I through the SAC that that the board of e invention (including antibodies and sin Berger et al., Gene 66:1-10 (1998); thom et al., Proc Natl Acad Sci USA (1994); and Black et al., Virus Genes 12 orated by reference in its entirety. To core the Ce.g., through the ATCC). Exempla: NK-YT cell line, which is a human m	lls are well known in the art and may be so f the invention (including antibodie or inhibit production of IL-10 and/or as ely modified to assess the ability of po antagonists of the invention) to modul mple, assays such as disclosed and/or see. Br Med Bull; 56 (4): 956-968 (200 assthma." Pharmacology & Therapeuti ncorporated by reference in their entiry assays include Th2 cells. IL 10 secretection. Th2 cells are a class of T cells the ferentiation and activation of Th2 cells by and asthma. Primary T helper 2 cell and its or a sthma. Primary T helper 2 cell and its or a sing peripheral blood lymph	Serum Response Element (SRE) are was the ability of polypeptides of the invite invention) to regulate the serum reswith. Exemplary assays for transcriptist SRE activity of the polypeptides of the invention) include assays disclosed in Enzymol 216:362-368 (1992); Her Black et al., Virus Genes 12(2):105-11 eference in its entirety. T cells that me through the ATCC). Exemplary mou
in many cell types. Exemplary assays for transcription through the SKE that may be used or routinery modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
response in element in mimmune cells a (such as natural killer (cells).	Production of L-10 and activation of T-cells.	Activation of transcription through serum response element in immune cells (such as T-cells).
	1250	1251
	HMTAD67	HMUAP70
	343	344

may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	duction of I gamma ig a T s	Activation of Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response transcription through GAS response element are well-known in the art and may be used or routinely modified to assess the ability of element in immune cells immune cells.  Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et efference in its entirety. Exemplary mouse T cells that may be used according to these assays are reference in its entirety. Exemplary T cells that may be used according to these assays are representations.
	1252 Pro using cell cell	1253
	HMVBN46	нмwев02
	345	346

				assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
347	HMWF002	1254	Production of IL.4	L.4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as L.4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 865-177-283 (194): Yesel et al., Res Immunol 144(8):60 (2003): Baeley et al., Nat Immunol
				(13):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
348	HMWFY 10	1255	Production of IL-8 by immune cells (such as the human EOL-1 eosinophil cells)	Assay that measures the production of the chemokine interleukin-8 (L-8) from immune cells (such as the EOL-1 human eosinophil cell line) are well known in the art (for example, measurement of L-8 production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. L8 is a strong immunomodulator and may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).
348	HMWFY10	1255	Production of ICAM in endothelial cells (such as human umbilical vein	Endothelial cells, which are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used in ICAM production assays include human umbilical vein endothelial cells (HUVEC), and are available from commercial sources. The expression of ICAM (CD54),a intergral membrane protein, can be upregulated by cytokines or other factors, and ICAM expression is important in mediating immune and endothelial cell interactions leading to immune and inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may

endothelial cells (HUVEC))	Production of IL-10 and activation of T-cells.	Activation of T-Cell p38 or JNK Signaling Pathway.
	1255	1256
	HMWFY 10	HMWGY65
	348	349

349	HMWGY65	1256	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
350	HNEAC05		Activation of transcription through serum response element in immune cells (such as Teells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
350	HNEAC05	1257	Activation of transcription through serum response element in immune cells (such as	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346

natural killer (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum response element in immune cells (such as Tecells).
al killer ).	tion of tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of the tion of th	Activation of transcription through serum response element in immune cells (such as Tecells).
	1258	1258
	HNEEB45	HNEEB45
	351	351

				antines of T calle with autotoxic activity
			  -  -	culture of 1 certs with Cyboronic activity.
351	HNEEB45		Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).	Assays for the activation of transcription through the NFKB response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., Proc estinety. For example, a reporter assay (which measures increases in transcription inducible from a NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic reaction. Eol-1 is a human eosinophil cell line.
351	HNEEB45		Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
352	HNFFC43	1259	Regulation of transcription via DMEF1 response element in	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and

invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR response elements. ME promoter may also responds to API and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in adipocoytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998); Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, I., et al., J Biol Chem, 274(25):17997-8004 (1999); Ilpenberg, A., et al., Methods in Enzymol. 216:362-368 (1992); the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays includes the H4IIE rat liver hepatoma cell line.	Assay for measuring regulation of proliferation of mouse bone marrow cells (in the presence or absence of exogenous Stem Cell Factor (SCF)) on a fibronectin extracllular matrix. Mouse bone marrow cells are plated onto 96-well fibronectin fragment coated plates in 0.2 ml of serum-free medium. Secreted protein factors (test factors) are tested with appropriate negative controls in the presence and absence of SCF (5.0 ng/ml), where secreted test factor supernates represent 10% of the total assay volume. The cells are grown for 7 days. The number of proliferating cells within the wells is quantitated by measuring thymidine incorporation into cellular DNA. This and similar assays may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate proliferation of bone marrow cells. Interactions between adhesion receptors on progenitor cells and their extracellular matrix ligands are essential for the control of hematopoiesis in bone marrow stroma. These interactions may help retain CD34+ hematopoietic progenitor cells within
	Regulation of transcription of Malic Enzyme in adipocytes	Bone marrow cell proliferation (fibronectin enhanced)
	1259	1260
	HNFFC43	HNFGF20
	352	353

				"Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362–368 (1992), the contents of
				each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be
	_			routinely generated. Exemplary cells that may be used according to these assays include the mouse 313- L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous
				substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to
354	HNFJE07	1261	Regulation of	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may
}			viability and	be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
			proliferation	and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta
			of pancreatic	cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable
			beta cells.	cells in culture based on quantitation of the ATP present which signals the presence of metabolically
				active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and
				proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol,
				15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol
				Chem 1998 Jul 10,273(28):17771-9 (1998), the contents of each of which is herein incorporated by
				reference in its entirety. Pancreatic cells that may be used according to these assays are publicly
-4				available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
				may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line
				established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain
				characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion.
				References: Asfari et al. Endocrinology 1992 130:167.
354	HNFJF07	1261	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
_			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used

according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an L-2 dependent suspension may be used according to these assays include the CTLL cell line, which is an L-2 dependent suspension of insulin an anagonists of the invention of lisuslin are well-known in the art and may be used or routinely work of the invention (including authodices and agonists or pancreatic to assess the ability of lolypeptides of the invention (including authodices and agonists or the invention) to stimulate insulin secretion from parteratic bear cells is upregulated by PALY using anti-art insulin antibodis. Insulin secretion from parteratic bear cells and pancreatic cells by polypeptides of the invention (including antibodices and agonists or antiagonists of the pancreatic cells by polypeptides of the invention (including antibodices and agonists or antiagonists of the pancreatic cells by polypeptides of the invention (including antibodices and agonists or antiagonists of the pancreatic cells by polypeptides of the invention (including antibodics and agonists or antiagonists of the invention) include assays disclosed in: Ahen. B., et al., And Physiol, 277(4 Pt 2);8959-66 (1995); L.invention) include assays are publicly available (e.g., through the ATCC) and/or may be continely generated.  Activation of Activation of Assays for the activation of transcription through API in established from cells according to these assays in the activation of transcription through the API response element are known in the art and may be used according to these assays for transcription through the API response element and agonists or element in inducible linsuin secretion. References: Affair et al. Emercentic cells induced at transplantable (e.g., through the API response element and agonists or element in inducible to assays the ability of polypeptides of the invention (including antibodies and agonisis or antiagonists of the invent				10	
HNFJF07 1261 HNFJH45 1262 SHNFJH45 1262	according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells the	may be used according to utese assays increase in other control of T cells with cytotoxic activity.	Assays for measuring secretion of insulin are well-known in the art and thay be used of the modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured antagonists of the invention) to stimulate insulin secretion from pancreatic beta cells is upregulated by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. Insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.	'	
HNFJF07 1261  HNFJH45 1262  HNFJH45 1262			Stimulation of insulin secretion from pancreatic beta cells.	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Activation of transcription
H				li i	1262
355			HNFJF07	HNFJH45	HNFJH45
			354	355	355

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for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element than we used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely
		ပ္ပ
through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through NFAT response element in immune cells (such as mast cells).	Endothelial
	1262	1263
	HNFJH45	HNGAK47
		356

modified to assess the ability of polypeptides of the invention (including authodies and agonists of antagonists of the invention) to promote caspase protease-mediated apoptosis. Induction of apoptosis in endothelial cells supporting the vasculature of tumors is associated with tumor regression due to loss of tumor blood supply. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or test all y Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Findothelial cells that may be used according to these assays include bovine aouric endothelial cells (bAEC), which are an example of endothelial cells which line blood vessels and are involved in functions that include, but are not limited to, angiogenesis, vascular tone, and immune cell extravasation.		
Apoptosis	Activation of transcription through serum response element in immune cells (such as Techls).	Production of ICAM-1
	1263	1264
	HNGAK47	HNGAP93
	356	357

its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.		
	Production of TNF alpha by dendritic cells	Production of MIP1alpha
	1267	1267
	HNGDJ72	HNGDJ72
	360	360

			,	65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
360	HNGDJ72		Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting etll proliferation and functional activities.
360	HNGDJ72	1267	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role

				solumotory programmeters
		_1	-	In promoting intinuity and initialization responded to the second may be used or routinely modified to
360	HNGDJ72	1267	Production of	Assays measuring production of LL-8 are well known in the art and that he used of common moments assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
			endothelial	invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely
,			cells (such as	modified to assess the ability of polypeptides of the invention (including antibodies and agoinsts of
		•	Human	antagonists of the invention) to regulate production and of secretaring as the second second in the second second in the second second in the second second in the second second in the second second in the second second in the second second in the second second in the second second in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second
			Cord	blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular
			Endothelial	permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the
			Cells).	initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in
-		1		recruitment and activation of immune cells such as neutrophils, macrophages, and symptocytes.
360	HNGDJ72	1267	Production of	Endothelial cells, which are cells that line blood vessels, and are involved in functions that available cell extravasation.
			ICAM in	are not limited to, anglogenesis, vasculal permissioning, vascular come, and include human umbilical vein
			endothelial	Exemplary enuonicital cells that may be used in the contraction contracts. The expression of ICAM
			ceils (sucn as	CONSTITUTION (110 VEC), and we will be upregulated by cytokines or other factors, and ICAM
			umbilical	expression is important in mediating immune and endothelial cell interactions leading to immune and
			unionica	inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may
			veill	the used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
			cells	and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may
			(HINEC)	he used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et
			((((1,011)	1 Approximately 199-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995);
				and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the
				contents of each of which is herein incorporated by reference in its entirety.
360	HNGD172	1267	Unregulation	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.
3	7100011		of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
	-		and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and
			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or
				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T
				cells. Such assays that may be used or routinely modified to test immunomodulatory activity of
				polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include,
	_			

				for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683,
				the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell
			-	receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated infinunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
360	HNGDJ72	1267	Upregulation	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is
			of CD71 and activation of	essential for cell proliferation. CD/1 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating
		•	T cells	cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides
				of the invention (including antibodies and agonists or antagonists of the invention) to modulate the
				activation of 1 cells, and/or mediate numoral or cell-mediated initinuity. Exemplaty assays that test for
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra
				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by
				reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human
				lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
				cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
361	HNGDU40	1268	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152	negative regulator of 1 cell proliferation. Reduced CD132 expression has been mixed to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of 1 cell
_			T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for

immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance resonanciveness to immunomodulatory factors.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in proliferation and functional activities.	·
	Production of MCP-1	Activation of JNK Signaling Pathway in immune cells (such as
	1269	1270
	HNGEG08	HNGEO29
	362	363

antibodies and agonists or antagonists of the invention) to modulate the activation of 1 cells, antibodies and agonists or antagonists of the invention) to modulate the activation of T evaluate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Rowland et al., "Lymphocytes: a practical approach" (That al., J Histochem Cytochem 40(11):1675-1683, and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, in the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell in the art. Human responsiveness to immunomodulatory factors.	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major nor cells that are actively proliferating essential for cell proliferation. CD71 is expressed on activated T cells, B cells, and most proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the of the invention of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays may be used according to these assays may be isolated using reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human techniques disclosed herein or otherwise known in the art. Human T cells are prima	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a medical and may be act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
	Upregulation of CD71 and activation of T cells	Production of MCP-1
	1272	1273
	HNGHR74	HNGIH43
	365	366

		1
invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including antibodies modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 and agonists or antagonists of the invention) include assays (1992); Henthorn et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci (1998); Luchinson and McCloskey, J Biol Chem 270(27):16333-16338 Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 Immunol 165(12):7215-7223 (2000); Mutchinson and McCloskey, J Biol Chem 270(27):16333-16338 incorporated by reference in its entirety. Mast cells that may be used according to publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature		
response element in immune cells (such as mast cells).	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Production of MCP-1
	1274	1274
	HNGD31	HNGU31
	367	367

				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
367	HNGIJ31	1274	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); Li, and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
367	HNGIJ31	1274	Activation of Skeletal Mucle Cell PI3 Kinase Signalling Pathway	Kinase assay. Kinase assays, for example an GSK-3 kinase assay, for PI3 kinase signal transduction that regulate glucose metabolism and cell survivial are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit glucose metabolism and cell survival. Exemplary assays for PI3 kinase activity that may be used or routinely modified to test PI3 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Nikoulina et al., Diabetes 49(2):263-271 (2000); and Schreyer et al., Diabetes 48(8):1662-1666 (1999), the contents of each of which are herein incorporated by reference in its entirety. Rat myoblast cells that may be used

according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cell intended from primary cultures of rat tipig muscle, that fuses to form multinucleated myothes and siniated flores after cultures of rat tipig muscle, that fuses to form multinucleated myothes and siniated flores after cultures of rat tipig muscle, that fuses to form multinucleated myothes and siniated flores after cultures of rat tipig muscle, that fuses to form multinucleated myothes and siniated flores after cultures of rational flores after cultures of the invention of signaling approsis are well known in the art and may be used or routinely modified to test JNK kinase activity promote or inibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inibit cell proliferation, activation, and apoptosis are well known in the att and may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the intermed or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and cobe Mn. Prog Biophys Mol Biol 71(3-4,4-7-50) (1999); kyriakis JM. Biochem Soc Symp 64-24-4-4-9-500 (1999); kina and cobe had been incorporated by reference in its entirety. Exemplary cells that may be used according to these herein incorporated by reference in its entirety. Exemplary cells that may be used according to these herein incorporated by reference in its entirety. Exemplary cells that may be used according to the sarsay situated protein kinase in human examples assays include essingphilis. The Al-4-4-3-500 (1999); the contents of each of which are the caregorists of the invention) to modulate signal invention (richding autibodies and agonists or antagonists of the invention of c-Jun Humand-to-Lizang Py each of which are between the according to protein kinase in human ec			<del></del>
HNGIQ46 1275	according to these assays are publicly available (e.g., through the ATCC). Exemplary rat myoblast cells that may be used according to these assays include L6 cells. L6 is an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuses to form multinucleated myotubes and striated fibers after culture in differentiation media.	X W F F F F F F F F F F F F F F F F F F	
HNGIQ46 1275		Activation of INK Signaling Fathway in immune cells (such as eosinophils).	Production of IL-6
<u> </u>			1276
368		HNGIQ46	HNGJE50
		368	369

				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
	-			production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				differentiation activity of polypeptides of the invention (including annicoding and activity of polypeptides); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
-				Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Tuman dendring cens are anugen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
369	HNGJE50	1276	Insulin	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely
			Secretion	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
				FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
				glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
				Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
				pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek,
				A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4
				(1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of
				Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by
				reference in its entirety. Pancreatic cells that may be used according to these assays are publicly
				available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
				may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line
				established from Syrian hamster islet cells transformed with SV40. These cells express glucagon,
				somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and
				glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and
				Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
370	HNGJO57	1277	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
			TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
		_	cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)

to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3885-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et Immunol 160(7):3882-3828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	7 8 8 4 77 5 6 7 7 7	
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through
	1278	1278
	HNGJP69	HNGJP69
	371	371

			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
		····	pre-	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
		•	adipocytes.	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
				content of each of which are herein incorporated by reference in its entirety. Fre-adipocytes that may be
				used according to these assays are publicly available (e.g., through the ALCC) almost many or forming the publicly available (e.g., through the ALCC) almost many or forming the publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second publicly and a second
				generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3.13-2.1
				cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under
				appropriate differentiation conditions known in the art.
371	HNGJP69	1278	Activation of	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or
		-	JNK	apoptosis are well known in the art and may be used or routinely modified to assess the ability of
			Signaling	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
_			Pathway in	promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity
			immune cells	that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the
			(such as	invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed
			eosinophils).	in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504
			•	(1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40
				(2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary cells that may be used according to these
				assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are
				recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover,
				exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate signal
				transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or
				cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun
				NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp
				Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric
				oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
	_			inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999);
				the contents of each of which are herein incorporated by reference in its entirety.

HNGJP69 1278 Activation of This reporter assay measures activation of the CATA-3 riginaling gallways in HMCJ Imman mast cell through the CATA-3 reports element are well-known in the art and through the CATA-3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate CATA-3 transcription factors and antibodies and agonists or antagonists of the invention) to regulate CATA-3 transcription factors and antibodies and agonists or antagonists of the invention) to regulate CATA-3 transcription factors and antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention including antibodies and agonists of the invention (including antibodies and agonists of the invention (including antibodies and agonists of the invention) to regulate CATA-3-response learned under the same antagonists of the invention include assays disclosed in larger et al. Cane 661-10 (1995), Cultion and antagonists of the invention include assays disclosed in larger et al. Cane 661-10 (1995), Cultion and antagonists of the invention include assays are publicly assays and agonists of the invention and agonists of the invention of the NFAT in mast cells that may be used according to these assays or the transcription of transcription of transcription of transcription of transcription of transcription of transcription of transcription of transcription of transcription of transcription include assays disclosed in large and echibits many characteristics of immature mast cell line invention) include assays disclosed in large or the invention of transcription and peace and modulate expression of genes involved in immune cells in manue cells in manue cells and manue activition of transcription and agonists or antagonists or antagonists or antagonists or antagonists or antagonisto		
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HNGJP69		
	127	
371	HNGJP69	HNGJP69
	371	371

				macticalic
371	HNGJP69		Activation of transcription through NFKB response element in immune cells (such as basophils).	This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell line. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 116:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al., Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukermia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.
372	HNGJT54		Activation of transcription through cAMP response element in immune cells (such as Teclls).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
372	HNGJT54	1279	Activation of transcription through serum response element in	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et

al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	D S C C C C C C C C C C C C C C C C C C	Assays for measuring calcium flux are well-known in the art and may be used or antagonists of the assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-antagonists of the invention include assays as al., Cell Calcium 1989 Nov-Dec; 10(8):535-41 (1989), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be routinely used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
immune cells (such as T-cells).	Production of MCP-1	Stimulation of Calcium Flux in pancreatic beta cells.
	1279	1280
	HNGJT54	HNGOI12
	372	373

	<del></del>	
generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343. 1981.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL-10, IL-13, IL-5 and IL6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
	Production of IL-10 and activation of T-cells.	Activation of transcription through serum response element in immune cells (such as T-cells).
	1280	1281
	HNGOI12	HNGOM56
	373	374

	7 8 8 4 6 0 0 8 5 6 8 6 8 8	Assays for the activation of transcription through the Ar1 response crement are morning antibodies be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
Production of ICAM-1	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through AP1 response element in immune cells (such as T-
1282	1283	1283
HNHAH01	HNHCX60	HNHCX60
375	376	376

			cells).	(1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
377	HNHCY64	1284	Production of IFN gamma using a T cells	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
378	HNHCY94	1285	Activation of transcription through AP1 response element in immune cells (such as Teells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol

				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Kowiand et al., Lymphocytes: a practical approach. Chapter 0.130-100 (2000), and voltassen of all., Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
380	HNHDW42	1287	Upregulation of CD69 and	CD69 FMA1. CD69 is an activation marker that is expressed on activated 1 cells, a cells, and the cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with
		•	activation of	inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are
			T cells	well known in the art and may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of
				T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CDOS, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
_				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et
				al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
				Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460
				(1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells
				that may be used according to these assays may be isolated using techniques disclosed herein or
				otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
				and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
				immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
381	HNHED17	1288	Production of	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
			正-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the

production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and functional activities. Such assays that may be used or routinely modified sand agonists or antagonists of the invention activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.		The mixed lymphocyte reaction assay (MLK) (see c.g., Lyamphocyte Reaction" below) is a complex in vitro assay of T-cell responsiveness and immune cell activation. This assay is useful, for example, as an in vitro model of allograft rejection and graft versus set disease. In this assays PBMCs from human donors are mixed, cultured, and monitored for thymidine incorporation (a measure of cell proliferation) to identify polypeptides of the invention
	Production of GM-CSF	Regulation (inhibition or activation) of immune cell proliferation.
		1290
	HNHE142	HNHFO29
	382	383

factor and all muscle. lary assays cytes and nists of the hists of the B); Mora, 4-21 (1994); ates the erger, et al., ontents of tes that may be mouse 3T3-tinuous	n in the art in the art in cluding inscription aample, a pathway. CRE in mplary odiffied to a gonists it. Cullen SA 85:6342-Chem entirety. In the ed according it is a in pre-
DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994); "Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):2366-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays include the mouse 373-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 373-L1 cells are a continuous substrain of 373 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.	Assays for the activation of transcription through the cAMP response element are well-known in the arrand may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to est cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the contineus substrain of 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a precontinuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-
ter and binds to Itation of Glut4 eter in fat and mu response elemen g antibodies and Biol Chem, 273(3), et al., J Biol Crowel DNA bindin n. 2000 Aug 4;27 nzymol. 2156:362 tirety. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty. Adipocytierty.	IP response elem y of polypeptides increase cAMP, ide variety of celist that activate the in differentiation CREB (CRE bin on that may be use invention (includent on Berger et al., Gotton), and Klein incorporated are publicly average adipocyte on wouse adipocyte ough clonal isols of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contractio
e GLUT4 promo d for insulin regulatose transpor test for DMEF1 vention (includin i, M.V., et al., J 12000); Liu, M.L. 2000); Liu, M.L. y element and nc (ce", J Biol Chen II., Methods in E eference in its en licly available (e: may be used accreadipocyte cell rough clonal isol	assess the ability the invention) to the invention) to s involved in a w to identify factor and is involved scription factor P response eleme olypeptides of th ssays disclosed i -368 (1992); He 120(3):1008-102 of which are her of which are her the eassays disclosed is search (1992); and the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eassays the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay the eastay th
t is present in the or that is required willin-responsive tely modified to epitides of the investored in Tha disclosed in Tha 5(21):16323-8 (See pair regulator in transgenic mi in transgenic mi in transgenic corporated by refers assays are pub mplary cells that dherent mouse psts developed thunder appropriate	of transcription nely modified to r antagonists of r areasion of genes areasion of genes areasion of genes areasion of genes in adipogenesis ence for the transuough the cAM nent activity of pention) include a maymol 216:362 and Mol Cell Biolocontents of each be used accordinately generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally generate rationally gener
DMEF1 response element is present in the GLUT4 promoter and binds to M another transcription factor that is required for insulin regulation of Glut4 ex GLUT4 is the primary insulin-responsive glucose transporter in fat and musc that may be used or routinely modified to test for DMEF1 response element pre-adipocytes) by polypeptides of the invention (including antibodies and a invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23 S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 273(25 chen GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275 Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-each of which is herein incorporated by reference in its entirety. Adipocytes be used according to these assays are publicly available (e.g., through the A7 substrain of 3T3 fibroblasts developed through clonal isolation. These cells adipose-like conversion under appropriate differentiation culture conditions.	be used or routines and agonists of and modulate exporter assert in the binding sequent ranscription to transcription to the propose elements of the investigation of the propose of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation of the investigation
DIMEF1 another t GLUT4 that may pre-adip inventio S., et al. "Identifi human C Gene 66 each of ' be used routinely L1 cell I substrain	Assays and may antibodi factors, 3T3-L1/CREB p contains assays f test cAM or antag and Mal 6346 (1) 273:917 Pre-adit ATCC) to these continu
element in adipocytes and pre- adipocytes	Activation of transcription through cAMP response element (CRE) in preadipocytes.
	1292
	HNHOD46
	385

205	PNUODING	1202	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription through serum response element in pre- adipocytes.	the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
385	HNHOD46	1292	Activation of transcription through cAMP response element in immune cells (such as Tecells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1988), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
385	HNHOD46	1292	Activation of transcription through serum response element in immune cells	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al.,

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of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Elur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the EMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through NFAT response element in immune cells (such as mast cells).
	1292	1292
	HNHOD46	HNHOD46
	385	385

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USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature	Assays for the activation of transcription through the cAMP response element are well-known in the art Assays for the activation of transcription through the cAMP in the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, bind to CREB transcription antibodies and agonists or antagonists of the invention of genes involved in a wide variety of cell functions. Exemplary assays factor, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays characteristic of the invention (including antibodies and agonists or cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1988); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the JURKAT cell line, which is a suspension cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.	Assays for the activation of transcription through the Nuclear Factor of Activation of transcription through the Nuclear Factor of Activation of transcription in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or functions. Exemplary assays for transcription through the NFAT response element activity of polypeptides of the invention (including routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays (1992); Henthorn et al., Gene antibodies and agonists or antagonists of the invention 216:362-368 (1992); Henthorn et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-84 Boer et al., Int J Biochem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are herein incorporated by reference in its entirety. T cells that may be used according to
	Activation of transcription through cAMP response element in immune cells (such as Teells).	Activation of transcription through NFAT response in immune cells (such as Teells).
	1292	1292
	HNHOD46	HNHOD46
	385	385

			these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce
			IL-2 when stimulated.
HNHOD46	1292	Activation of transcription through NFKB response element in immune cells (such as basophils).	This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell line. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the MFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.
HNHOD46	1292	Activation of transcription through GAS response element in immune cells (such as Tecells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
HNHOD46	1292	Activation of transcription through NFKB response element in	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)

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immune cells (such as Tcells).	Activation of transcription through NFKB response element in immune cells (such as natural killer cells).	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Activation of transcription through
	1292	1292	1292
	HNHOD46	HNHOD46	HNHOD46
	385	385	385

	-	CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely
		response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
		element in immune cells (such as T-	and agonists of antagonists of the informal microscience, assays of 1992); Henthorn et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci 15A 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
		cells).	Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incompared by reference in its entirety. T cells that may be used according
			to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
	-		used accoloning to mose assays menace me our a comment.
HNHOD46	1292	Activation of transcription	Assays for the activation of transcription through the Gamma Interferon Activation Site (UAS) response element are well-known in the art and may be used or routinely modified to assess the ability of
		through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
		element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
		such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
		cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Ivau
			al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
			reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used
	$\neg \tau$		according to these assays are publicly available (e.g., through the A.I.C.).
HNHOD46	1292	Activation of	Assays for the activation of transcription though the formal recovers of the confidence of the ability of
		through	polymentides of the invention (including antibodies and agonists or antagonists of the invention) to
		NFAT	regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
		response	functions. Exemplary assays for transcription through the NFAT response element that may be used or
		element in	routinely modified to test NFAT response element activity of polypeptides of the invention (including
		rmmune cells	antibodies and agonists of aniagonists of the life invention) include assays discussed in 20,50 cm., 20,50 cm., 46,1-10 (1998): Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
		cells).	Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De
			Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
			(1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are
			herein incorporated by reference in its entirety. T cells that may be used according to these assays are

This is a simple (e.g. through the ATCC). Exemplary human T cells that may be used according to	publicly available (C.E., C.E.). the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T these assays include the SUPT cell line, which is a suspension cells.	C 8 1 8 2 8 0 0 0 0 1	3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Activation of Assays for the activation of transcription through the Serum Response Element (SAL) are well an invention transcription the art and may be used or routinely modified to assess the ability of polypeptides of the invention through (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and (including antibodies and agonists or antagonists of the invention) to regulate the function of growth-related genes serum
		Activation of transcription through STAT6 response element in immune cells (such as Tcells).	Activation of transcription through NFKB response element in immune cells (such as Tcells).	
		1292	1292	1292
		HNHOD46	HNHOD46	HNHOD46
		385	385	385
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include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.	A the Hill of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the com	Caspase Apoptosis. Assays for caspase apoptosis are well known in the continuous continuous. Assays for caspase apoptosis are well known in the continuous of the assays to assass the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention of diabetes. Exemplary assays for caspase pancreatic beta is associated with induction and progression of diabetes. Exemplary assays for caspase pancreatic beta is associated with induction and progression of diabetes. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the apoptosis that may be used or routinely modified to test capase apoptosis activity of polypeptides of the apoptosis that may be used or routinely generated. 129(4):67-94 (2000); Chandra J. et al., 39(6):1229-36 (1996); Krautheim, A., et al., J Pharmacol, 126(7):4481-9 (2000); Chandra J. et al., 59(6):1229-36 (1996); Lat., 4000]; Suk K, et al., J Immunol, 166(7):4481-9 (2001); Tejedo J, et al., Diabetes, 50 Suppl 1:544-7 (2001); Suk K, et al., J Immunol, 166(7):4481-9 (2000); Tejedo J, et al., Diabetes, 50 Suppl 1:544-7 (2001); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
(such as basophils).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Regulation of apoptosis in pancreatic beta cells.
	1293	1294
	HNHOG73	HNTBL27
·	386	387

				may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic beta cell insulinoma cell line derived from a radiation induced transplantable rat islet cell tumor. The cells
				produce and secrete islet polypeptide hormones, and produce insulin, somatostatin, and possibly glucagon. ATTC: #CRL-2057 Chick et al. Proc. Natl. Acad. Sci. 1977 74:628; AF et al. Proc. Natl. Acad. Sci. 1980 77:3519.
387	HNTBL27	1294	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "1h-2 cytokines in allergic disease brived buil, 30 (4), 330-306 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete
				IL4, IL 10, IL 13. IL.5 and IL6. Factors that induce differentiation and activation of 1112 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
388	HNTCE26	1295	Production of TNF alpha by dendritic	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using

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Head hearing or hearing known in the art. Human dendritic cells are antigen presenting	techniques disclosed iteratif of our was a section of our control of the angle of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of		ou oj	CD69 FMAT. CD69 is an activation marker that is expressed on activated 1 cens.)  Solution CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with CD69 is not expressed on resting T cells, B cells, and leukocytes are inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
		Stimulation of insulin secretion from pancreatic beta cells.	Production of ICAM-1	Upregulation of CD69 and activation of T cells
		1295	1295	1295
		HNTCE26	HNTCE26	HNTCE26
		388	388	388

				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
		-		activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et
				al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and
				Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Atetra et al., Ann Kneum Dis 52(0):437-400
				(1995), the contents of each of which are included involved to the used according to these assays may be isolated using techniques disclosed herein or
			-	otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
				and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
300	i Oli edil edi.		Description of	immunity and may be preactivated to enhance responsiveness to initiation contacts.  According for the remijorion of transcription through the DMEFI response element are well-known in the art
389	HNINIOI	0671	Regulation of	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			via DMEF1	antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a
			response	reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The
			element in	DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and
			adipocytes	another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle.
			and pre-	GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays
			adipocytes	that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and
			•	pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora,
				S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994);
				"Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the
				human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al.,
				Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of
				each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may
				be used according to these assays are publicly available (e.g., through the ATCC) and/or may be
				routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-
				LI cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous
				substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to
				adipose-like conversion under appropriate differentiation culture conditions.
389	HNTNIOI	1296	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including

through deficies and agonists or antagonists of the invention) to increase cAMP antibodies and agonists or antagonists of the invention of the controlled in an wide variety of rell functions. For example, a factors, and making and modulate expression of genes involved in a wide variety of rell functions. For example, a factor, and making an amount through the cAMP response element that may be used or tought properties. GCEB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CREB (CRE			
HNTNI01 1296  HNTNI01 1296	8460000	7 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10 B O 10	
HNTNI01 1296	hrough AMP esponse slement CRE) in pre- idipocytes.	Activation of transcription through serum response element in pre-adipocytes.	Activation of transcription through GAS response
H	10100	1296	1296
389		HNTNI01	HNTNI01
		389	389

		element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
	<del></del>	(such as	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
		eosinophils).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 210:302-300 (1992), 110minon of Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
			al., J Immunol 155(10):4582-4587 (1995); the contents of each of which are herein incorporated by
			the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
			invention) to activate or inhibit activation of immune cells include assays disclosed and/or cited in:
			Mayumi M., "EoL-1, a human eosinophilic celi line. Leuk Lylipholila, Juli, (2):273-30 (1772), Bhatracharya S. "Granulocyte macrophage colony-stimulating factor and interleukin-5 activate STAT5
_			and induce CISI mRNA in human peripheral blood eosinophils" Am J Respir Cell Mol Biol;
			Mar;24(3):312-6 (2001); and, Du J, et al., "Engagement of the CrkL adapter in interleukin-5 signaling in
			eosinophils." J Biol Chem; Oct 20;2/5(42):3310/-/5 (2000); the contents of each of which are noted.
			include explorabilis. Easinophils are a type of immune cell important in the late stage of allergic
	_		reactions; they are recruited to tissues and mediate the inflammtory response of late stage allergic
			reaction. Increases in GAS mediated transcription in eosinophils is typically a result of STAT activation,
			normally a direct consequence of interleukin or other cytokine receptor stimulation (e.g. IL3, IL5 or
	$\neg$	ı	
389 HINTNI01	01 1296		
		transcription	and may be used or routinely modified to assess the ability of polypeptities of the invention (including
		through	
		NFKB	
		response	
		immine cells	
		(such as	
		EOL1 cells).	
	. "		
			entirety. For example, a reporter assay (which measures increases in transcription inducible from a
		-	NFkB responsive element in EOL-1 cells) may link the NFKB element to a repeorter gene and binds to
			the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune
_			cells that may be used according to these assays include eosinophils such as the human EUL-1 cell line of

I.	
eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.  Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesis MEp and MEd identified as putative PPAR promoter contains two direct repeat (DR1)- like elements MEp and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in addioocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 8(10): 1361-9 (1994); Barroso, I., et al., J Biol Chem, 274(25): 17997-8004 (1999); Ijpenberg, A., et al., Methods in Enzymol. 216:362–368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available to the according to these assays are publicly available.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA-3 response element are well-known in the art and antibodies and agonists or antagonists of the invention) to regulate GATA-3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA-3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available feach through the ATCO. Exemplary human mast cells that may be used according to these assays.
Regulation of transcription of Malic Enzyme in adipocytes	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
1296	1296
HNTNIOI	HNTN101
389	389

include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells. This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., In J Biochem Cell Biol 31(10):1221-1236 (1999); Al et al., Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. Activation of NFkB in mast cells has been linked to production of certain cytokines, such as IL-6 and IL-9. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., Immunol 166(7):4391-8 (2001); and Marquardt and Walker, J Allergy Clin Immunol 105(3):500-5 (2000), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an
Activation of transcription through NFAT response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cells (such as mast cells).
1296	1296
HNTNI01	HNTNIOI
389	389

mandature human mast cell line established from the peripheral blood of a patient with mast cell leukernia, and exhibits many characteristics of immature mast eells.  Activation of Assays for the activation of transcription through the Signal Transducers and Activators of Transcription through the capeable of the continely modified to assass the ability of polypepides of the invention in the star and may be used or routinely modified to test 5TAT6 response element activity of the invention) to regulate STAT6 response element and may be used or routinely modified to test 5TAT6 response element activity of the invention) to regulate STAT6 response element activity of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the invention of the polypepides of the polypepides of the invention of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of the polypepides of t				1
HNTNI01 1296 Ac tra th Sr Sr Sr Sr Sr Sr Sr Sr Sr Sr Sr Sr Sr	immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia.	8 7 0 11 0 1 0 1		
HNTNI01 1296 9 HNTNI01 1296 89 HNTNI01 1296		Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cellif (such as basophils).	├
H 6	-		1296	1296
389			HNTN101	HNTNI01
		389	389	389

	<u> </u>	
(including antibodies and agonists or antagonists of the invention) to bind the serum response factor and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
through serum response element in immune cells (such as T-cells).	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Activation of transcription through GAS response element in immune cells (such as Tealls).
	1296	1296
	HNTN101	HNTNI01
	389	389

modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4: 193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6: 138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
NFKB response element in irmmune cells (such as T- cells).	Production of IL-6	Activation of Adipocyte ERK Signaling
	1298	1299
	HOACB38	HOCNF19
	391	392

induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:2948 (1999); Chang and Karin, Nature 410(6824):3740 (2001); and Cobb MH, Prog Biophys Symp 64:2948 (1999); Chang and Karin, Nature 410(6824):3740 (2001); and Cobb MH, Prog Biophys its entirety. Mouse adipocyte cells that may be used according to these assays (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 373-L1 cells. 373-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 373 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	0.10 0.10	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ 1 cells.  Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or
	Production of IL-4	Upregulation of HLA-DR and activation of T cells
	1299	1299
	HOCNF19	HOCNF19
	392	392

				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "I ymphocytes: a practical approach." Chapter 6:138-160 (2000); Lamour et al., Clin Exp
				Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be presentivated to enhance responsiveness to immunomodulatory factors.
393 HOD	HODDN65	1300	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Mivamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of
				each of which is herein incorporated by reference in its entirety. Cells that may be used according to
				Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
394 HOD	HODDN92	1301	Production of MIP1alpha	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or
<del>-</del>	-	-		routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and
				modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
				activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to
				test immunomodulatory and chemotaxis activity of polypeptides of the invention (including annibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol

65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	2 8 3 6 1 5 6 1 6 1	
	Production of MCP-1	Production of IL-6
	1301	1301
	НОДДИН	норри92
	394	394

senting ulate T	ne art uding a moter is tion in ity (in of the 3 (2000); 1):257-65 2-368 :ytes that the to these	ist cell I. Assays Irt and Ig and ry assays o test onists or len and i342-6346 ro et al., enderson
Rowland et al., "Lymphocytes: a practical approach" Chapter 0:138-100 (2000); and vertiasself et al., "Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in it entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the regulation of transcription through the FAS promoter element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in livers of diabetic mice. This stimulation of transcription is also somewhat glucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 (Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Firm I Immunol 29(12):304-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
i-160 (2000); a herein incorpo e assays may b dendritic cells r cytokines, in	Assays for the regulation of transcription through the FAS promoter element are well-known in and may be used or routinely modified to assess the ability of polypeptides of the invention (in antibodies and agonists or antagonists of the invention) to activate the FAS promoter element ir reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS pregulated by many transcription factors including SREBP. Insulin increases FAS gene transcriptions of diabetic mice. This stimulation of transcription is also somewhat gucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element act hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonist invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:3 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepat may be used according to these assays, such as H4IIE cells, are publicly available (e.g., throug assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.	nathway in HM ne and chemol read chemol read chemol ides of the inv GATA3 trans conse developr e used or routi al., Gene 66:1 Proc Natl Aca 571 (1999); Re 89(4):587-596
Chapter 6:138 1 of which are ording to these e art. Human antigen and/c	FAS promote ability of polyym) to activate S, a key enzyr EBP. Insulin tion is also so lifted to test for ling antibodie II. Proc Natl A 19); Oskouian IIen, B, et al., porated by ref. E cells, are pu ary hepatocyte le with glucocole.	4-3 signaling I nked to cytoking a response ele (3 response ele (ity of polypept on) to regulate or immune response that may bothe invention din Berger et enthorn et al., t Biol 64:563-d Flavell, Cell de Control of the invention et al., t Biol 64:563-d Flavell, Cell
cal approach" mtents of each y be used acc e known in th n activated by	to assess the softhe invention the invention of the invention of FA including SR in of transcription of transcription (inclumed, S., et a frontion (inclumed); 743-51 (19988); and, Cull sherein incorports and Exemplicated.	n of the GAT/ Ils has been li igh the GATA issess the abili of the inventi of the inventi oolypeptides o ssays disclose ssays disclose 568 (1992); H b Symp Quan
cytes: a practi (1997), the cc c cells that ma in or otherwis e, which, whe	of transcriptic nely modified really modified rantagonists regulate transcription factors. This stimulatic ay be used or ides of the invicohem, 260(3 ne 66: 1-10 (1 ach of which is these assays, outinely generall leads of the action of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contro	ures activation ures activation dela 3 in mast ce scription through and an analoguists and cell gene and cell gene (the GATA3 in activity of join) include a mol 216:362-3014 Spring Har
Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	the regulation to used or routii and agonists o nstruct and to y many transc abetic mice. T assays that m s) by polypept include assays et al., Eur J Bi rger, et al., Ge contents of ea ed according to d/or may be ro ude rat liver h	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-634(1988); Elavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Furr J Imminol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
Rowland et Immunol 1: entirety. H techniques cells in sus cell prolife	Assays for the and may be antibodies a reporter con regulated by livers of dia Exemplary invention) in Roder, K., e (1996); Berry (1992), the of may be used ATCC) and assays includerivatives.	This repor line. Activ for the acti may be use antibodies modulate of for transer GATA3-re antagonist Malm, Me (1988); FI Fur J Imm
	Regulation of transcription through the FAS promoter element in hepatocytes	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
	1301	1301
	НОББИР	НОББ НОБ
	394	394

et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	E V a S i i i i i i i i i i i i i i i i i i	jo
	Activation of transcription through NFAT response element in irranune cells (such as mast cells).	Activation of Endothelial Cell p38 or JNK Signaling Pathway.
	1301	1301
	норри92	HODDN92
	394	394

				that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	— т
395	НОББООВ	1302	Activation of transcription through CD28 response element in immune cells (such as Teells).	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate LL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of LL-2 and LL-4 responsive T cells.	
396	HODDW40	1303	Production of MIP I al pha	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, JR Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	0 = 1
396	HODDW40	1303	Regulation of	Regulation of Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely	

		<del></del>
	C T O T II T O T O T O	Assays for the activation of transcription through the Scium Newpoins Caraman (1977) the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and (including antibodies and agonists or antagonists of the invention through the SRE that may be used or routinely in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
apoptosis of immune cells (such as mast cells).	Activation of transcription through serum response element in immune cells (such as Teells).	Activation of transcription through serum response element in immune cells
		1304
	HODFN71	HODFN71
	397	397

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Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998). Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate LL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of LL-2 and LL-responsive T cells.	Assays for the activation of transcription through the NFKB response element are well-known in the art
(such as T-cells).	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Activation of transcription through CD28 response element in immune cells (such as T-cells).	Activation of
	1304	1304	1304
	HODFN71	HODFN71	HODEN71
	397	397	707

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and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) of polypeptides assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T these assays include the SUPT cell line, as suspension culture of IL-2 and IL-4 responsive T	8711111	
transcription through NFKB response element in immune cells (such as Teells).	Activation of transcription through NFAT response element in immune cells (such as natural killer cells).	Activation of transcription through serum response element in immune cells
	1304	1304
	HODFN71	HODFN71
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used or routinally modified to assess the ability of polypeptides of the immuno cultural and agonists or antagonists of the invention of modified to assess the ability of polypeptides of the immunoculation, include sasys that rest for immunoculating antibodies immunoculated activation. Exemplary assays that may be used or routinely modified to usest activation of nonocytes and T cells. Such assays that may be used or routinely modified to usest activation of nonocytes and T cells. Such assays that may be used or routinely modified to usest activation of nonocytes and T cells. Such assays that may be used a routinely modified to usest immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies).  186.2919-2925 (1997), the contents of ceah of which are herein incorporated by reference in its entirely. 188.2919-2925 (1997), the contents of ceah of which are herein incorporated by reference in its entirely. 188.2919-2925 (1997), the contents of ceah of which are herein incorporated by reference in its entirely. 188.2919-2925 (1997), the contents of ceah of which are herein incorporated by reference in its entirely. 188.2919-2925 (1997), the contents of ceah of which are herein incorporated by reference in its entirely. 188.2919-2925 (1997), the contents of ceah of which are assays may be been found to be associated with of CD69 and captered or routinely modified to assess the ability of polypeptides of the invention marker that is expressed on activated 7 cells, and NK cells. 1990 (1997) and the manusomodulatory potents expressed on activated 7 cells, and or expressed on resting 7 cells, and and manusomodulatory potents expressed on activated 7 cells, and or expressed on resting 7 cells, and or expressed on resting 7 cells, and or expressed on resting 7 cells, and or expressed on resting 7 cells, and or expressed on resting 7 cells, and or expressed on resting 7 cells, and or			_
HOEBK34 1306 U	used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test activation of monocytes and differentiation activity of polypeptides of the invention (including antibodies immunomodulatory and differentiation activity of polypeptides of the invention and Eremin, J R coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol (2000); Satthaporn and Eremin, J R coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol (2000); Satthaporn and Eremin, J R coll Surg Ednb 45(1):9-19 (2001); and verterence in its entirety. I S8:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. I sinclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cells proliferation and functional activities.		
HOEBK34 1		Upregulation of CD69 and activation of T cells	Upregulation of CD152
1		1306	1306
399		НОЕВК34	ноевк34
		399	399

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hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary are primary in the art. Human T cells are primary are perference in the art. Surface and CD3, CD4, or CD8.	These cells madiate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.  IL 4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cells polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal (8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol (3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the set Human T cells are arrinary human lymphocytes that mature in the thymus and express a T cell that may be reconting to these assays may be isolated using techniques disclosed herein or otherwise reconting the Human T cells are arrinary human lymphocytes that mature in the thymus and express a T cell
and activation of T cells	Production of IL-4
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receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic polypeptides of cells are well known in the art and may be used or routinely modified to assess the aimmunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytokoxic response. Such assays that may (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et Immunol 160(7):385-3593 (1998); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using in its entirety. Human dendritic cells that may be used according to these assays may be isolated using cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T ell proliferation and functional activities.	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated constructions up activated by activated by activated by activated by activated by activated by activated by the invention (including antibodies and routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the production of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
	Production of TNF alpha by dendritic cells	Production of MIP1alpha
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suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	10 % 2 % 2 % 2		TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
	Activation of transcription through STAT6 response element in immune cells (such as Tcells).	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Production of TNF alpha by dendritic cells
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such as tumor necrosis factor alpha otoxic response. Such assays that may of polypeptides of the invention ) include assays disclosed in Miraglia et Lymphocytes: a practical approach" 1):3886-3890 (1198); Dahlen et al., J 158:2919-2925 (1997); and Nardelli et ch are herein incorporated by reference to these assays may be isolated using in dendritic cells are antigen presenting Vor cytokines, initiate and upregulate T	used or routinely modified to assess the agonists or antagonists of the invention) sion of multiple genes. Exemplary t may be used or routinely modified to invention (including antibodies and I in Berger et al., Gene 66:1-10 (1998); nothorn et al., Proc Natl Acad Sci USA 1998); Moffatt et al., Transplantation characteristic and Masuda et al., J Biol chare herein incorporated by reference in re publicly available (e.g., through the assays include the SUPT cell line, which	standard well-kilowin in the art with the invention (including antibodies and proliferation of pancreatic beta assay measures the number of viable signals the presence of metabolically diffied to test regulation of viability and mition (including antibodies and agonists in the presence of metabolically and mition (including antibodies and agonists in the property of the proposition of the property of the proposition of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the pro
immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 128(11):386-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the Signal Transducers and Activation of transcription through the Signal Transducers and Activation of Lanscription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Buo J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the regulation of viability and proliteration of cells in vitto are well-known in the actual may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists)
	Activation of transcription through STAT6 response element in immune cells (such as Tcells).	Regulation of viability and proliferation of pancreatic beta cells.
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	403	404

				8 (1998); Krautheim A, et al, Exp Clin Endocrinol Diabetes, 107 (1):29-34 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, the cells are an elucation and sunmessed by somatostatin or glucocorticoids. ATTC#
		1		CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
404	ноғмQ33	1311	Activation of transcription through	Assays for the activation of transcription through the Serum Response Element (SKE) are Well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to bind the serum response factor and the last of pages involved in growth and integral the function of growth-related genes
			serum response element in	modulate the expression of genes in force in growin and upregation. The continued in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or the continued includes a second discovery disclosed in Percent et al. Gene 66:1-10 (1998): Cullen and
			(such as T-cells).	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
				(1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells such as the MOI T4 that may be used according to these assays are publicly available (e.g., through)
				the ATCC).
405	HOFMT75	1312	Activation of T-Cell p38 or JNK	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			Signaling Pathway.	to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-
				induced activity of polypeptides of the invention (inchesing minorated activity of polypeptides); Gupta et invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and
				Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be
				used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent

				1 11 1. A company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of
			-1	suspension-culture cell line with cytotoxic activity.
405	HOFMT75	1312	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 knase assays for signal transduction that regulate con professions activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays include human umbilical vein endothelial cells which line venous blood vessels, and are involved in functions that include, which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular note, and immune cell extravasation.
406	HOFNC14	1313	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell pronectation, activation, appptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils." J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3)

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Pt 1):565-74, and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that the upregulation of are involved in functions that include, but are not limited to, angiogenesis,
	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Activation of transcription through serum response element in immune cells (such as T-cells).	VCAM in endothelial cells (such as
	1314	1315	1315
	HOFND85	HOFNY91	HOFNY91
	407	408	408

vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	Assays for the activation of transcription through the NFAD response cleaned and activation of transcription through the INFAD response cleaned are activated to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blarquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and and agonists or modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis that may be used or disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or disease and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., 1 Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Vasc Res 37(3): 209-218 (2000); and (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Not et al., J Vasc Res 37(3): 209-218 (2000); and incorporated by reference in its entirety. Immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
umbilical . vein endothelial cells (HUVEC))	Activation of transcription through NFKB response element in immune cells (such as natural killer cells).	Regulation of apoptosis of immune cells (such as mast cells).
	1316	1317
	ногосзз	HOGCK20
	409	410

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	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T	
Production of ICAM-1	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Production of TNF alpha by dendritic cells
1318	1319	1320
нодскез	HOGCS52	нонвв49
411	412	413

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the contents of each of which are herein incorporated by reference	al., J Leukoc Biol 03:022-020 (1797), in commentation of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of the season of t			
		Activation of Natural Killer Cell-ERK Signaling Pathway.	Production of ICAM-1	Activation of Natural Killer Cell ERK Signaling Pathway.
		1321	1322	1323
		нонвс68	нонву 12	нонсс74
		414	415	416

Kyriakis nd Cobb e assays d which	ion se factors hrough invention Berger et in et al., 997), the e used cells that suspension	tts or sed or .; (1995); the used eely Muscle	or and optosis in or caspase
invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary natural killer cells that may be used according to these assays include the human natural killer cell lines (for example, NK-YT cells which have cytolytic and cytotoxic activity) or primary NK cells.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinery modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote caspase protease-mediated apoptosis. Apoptosis in pancreatic beta is associated with induction and progression of diabetes. Exemplary assays for caspase
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		Production of ICAM-1	Regulation of apoptosis in pancreatic beta cells.
	1 1	1325	1325
	нонснss	HOSD125	HOSDJ25
·	417	418	418

1. Loweth, AC, et al., FEBS Lett, 400(3):285-8 (1997); Sain, (S.S. et al., Biochem Mod Biol Int., Diabetes, 50 Suppl 1:244-7 (2001); Sain, H. F. et al., Thomanol, 166(7):4481-9 (2000); Chandra J. et al., Diabetes, 50 Suppl 1:244-7 (2001); Sain, R., et al., Thomanol, 166(7):4481-9 (2000); Chandra J. et al., Diabetes, 50 Suppl 1:344-7 (2001); Sain, R., et al., Thomanol, 166(7):4481-9 (2000); Tepedo J. et al., TEBS Lett, 48(5):153-20 (1999); Lave Res 37(3): 209-218 (2000); and Karsan and Harlan, Atheroscier Thromb 3(2): 7-36 (1996); Than 2, et al., FEBS Lett, 48(5):153-20 (1999); Lave Res 37(3): 209-218 (2000); and Karsan and Harlan, Atheroscier Thromb 3(2): 7-36 (1996); the contents of each of which are brenin incorporated by Atheroscier Thromb 3(2): 7-36 (1996); the contents of each of which are brenin incorporated by Atheroscier Thromb 3(2): 7-36 (1996); the contents of each of which are brenin incorporated by available (e.g., through the ATCC) and orm ay be coutinely generated. Exemplary pancreatic cells that may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic beta cell in a derived from a radation induced transplantable at sist let cell lumon. The cells produce and secrete istel polypeptide bornones, and produce insulin, somatostatin, and possibly glueagon. ATTC: #CRL-2057 Chick et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1977 4:628; AF et al. Proc. Natl. Acad. Sci. 1978 4:628; AF et al. Proc. Natl. Acad. Sci. 198					including antibodies and agonists or antagonists of the invention) include the assays disclosed
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					in: Loweth, AC, et al., FEBS Lett, 400(3):285-8 (1997); Saini, KS, et al., Biochem Mol Biol Int,
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					39(6):1229-36 (1996); Krautheim, A., et al., Br J Pharmacol, 129(4):687-94 (2000); Chandra J, et al.,
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					Diabetes, 50 Suppl 1:S44-7 (2001); Suk K, et al., J Immunol, 166(7):4481-9 (2001); Tejedo J, et al.,
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					FEBS Lett, 459(2):238-43 (1999); Zhang, S., et al., FEBS Lett, 455(3):315-20 (1999); Lee et al., FEBS
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6				•	Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and Karsan and Harlan, J
HOSDI25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6				•	Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					reference in its entirety. Pancreatic cells that may be used according to these assays are publicly.
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6		-			may be used according to these assays include RIN-m. RIN-m is a rat adherent pancreatic beta cell
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					insulinoma cell line derived from a radiation induced transplantable rat islet cell tumor. The cells
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6				_	produce and secrete islet polypeptide hormones, and produce insulin, somatostatin, and possibly
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					glucagon. ATTC: #CRL-2057 Chick et al. Proc. Natl. Acad. Sci. 1977 74:628; AF et al. Proc. Natl.
HOSDJ25 1325 Activation of transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6					Acad. Sci. 1980 77:3519.
transcription through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6	418	HOSD175	1	Activation of	Assavs for the activation of transcription through the Nuclear Factor of Activated T cells (NFA1)
through NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6	?			francorintion	reconnect element are well-known in the art and may be used or routinely modified to assess the ability of
NFAT response element in immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6				thanscription	incorporate of the invention (including antibodies and agonists or antagonists of the invention) to
HOSEG51 1326 Production of IL-6				UII Ougii	polypopings of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the
HOSEG51 1326 Production of IL-6				NFAI	regulate in All demonstration accounts and the MFAT resonance element that may be used or
HOSEG51 1326 Production of IL-6				response	Turctions. Exemplary assets at monocons almost principle of the invention (including
immune cells (such as natural killer cells).  HOSEG51 1326 Production of IL-6				element in	routinely mountied to test in the response element wently of perfect in Description of the second in Description
(such as natural killer cells).  HOSEG51 1326 Production of IL-6				immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Deliger et al., Deliger
natural killer cells). HOSEG51 1326 Production of IL-6				(such as	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 210:362-368 (1992); Henthom et al., Froc Nau
cells).  HOSEG51 1326 Production of IL-6				natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al.,
HOSEG51 1326 Production of IL-6				cells).	Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999);
HOSEG51 1326 Production of IL-6					and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein
HOSEG51 1326 Production of IL-6					incomporated by reference in its entirety. NK cells that may be used according to these assays are
HOSEG51 1326 Production of IL-6					multiply available (e.g. through the ATCC). Exemplary human NK cells that may be used according to
HOSEG51 1326 Production of IL-6					these access include the NK-YT cell line, which is a human natural killer cell line with cytolytic and
HOSEG51 1326 Production of IL-6					Cylotoxic activity.
II.6	410	HOSEGS1	1326	Production of	L-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
	;			1,6	induced IEE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory differentiation factor proteins produced by a large variety of cells where the expression level is strong				)	induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
differentiation factor proteins produced by a large variety of cells where the expression level is strong				-	all semanation as myelomas and chronic hyperproliferative diseases. Assays for immunomodulatory and
					differentiation factor proteins produced by a large variety of cells where the expression level is strongly

				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate production and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the arr. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
420	ноѕеQ49	1327	Production of MIP lalpha	MIP-1alpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
421	HOSFD58	1328	Activation of T-Cell p38 or	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliteration, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of notive prides of the invention (including antibodies and agonists or antagonists of the invention)
			JNK	ability of polypeptides of the invention (inclinding annowates and agonises of annagonises of the invention).

to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase—for JNK and p38 kinase—for JNK and p38 kinase—for JNK and p38 kinase—induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Cupta et invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Chang and al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and the contents of each of which are herein incorporated by reference in its entirety: T cells that may be the contents of each of which are publicly available (e.g., through the ATCC). Exemplary mouse T cells used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for EKK signal trainstruction that the art and may be used or routinely regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le invention) include the assays disclosed in Forrer et al., Biol Chem 370(8-9):1101-1110 (1998); Le invention Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in the Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays of 373 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Kinase assays, for example an EJK-1 Kinase assay 101 EAN signal distributions of the specification or differentiation, are well known in the art and may be used or routinely modified to assess proliferation or differentiation, are well known in the art and may be used or routinely of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include polypeptides of the invention) (including antibodies and agonists of antagonists of the invention) include polypeptides of the invention) (including antibodies and agonists of antagonists of the invention) include polypeptides of the invention) (including antibodies and agonists of antagonists of the invention) include polypeptides of the invention) (including antibodies and agonists of antagonists of the invention) include polypeptides of the invention (including antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of antibodies and agonists of
Signaling Pathway.	Activation of Adipocyte ERK Signaling Pathway	Regulation of proliferation and/or differentiation n in immune cells (such as mast cells).
V) II	1329	1329
	HOUCQ17	HOUCQ17
	422	422

				Nature 410(6824):3740 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary immune cells that may be used according to these assays include human mast cells such as the HMC-1 cell line.
422	HOUCQ17	1329	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
422	HOUCQ17	1329	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are

publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to assays for transcription through the STAT6 response element and may be used or routinely modified to assays for transcription through the STAT6 response element activity of the polypeptides of the invention (including antibodies and test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); agonists or antagonists of the invention) include assays (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation Gene 275(38):29331-29337 (2000); the contents of each of which are herein incorporated by reference in Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in the entirety. T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.	MIP-Ialpha FMAT. Assays for immunomodulatory proteins produced by activated continuous uppergulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein I alpha (MIP-1a), and the production of chemokines, such as macrophage inflammatory protein I alpha (MIP-1a), and the production of chemokines, such as macrophage inflammatory protein I alpha (MIP-1a), and the production of chemokines, such as macrophage inflammatory protein I alpha (MIP-1a), and the agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Leukoc Biol (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., T Leukoc Biol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Immunol entering culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell are antigen presenting cells in
	Activation of transcription through STAT6 response element in immune cells (such as Tcells).	Production of MIP1alpha
	1330	1331
	HOUDK26	HOUGG12
	423	424

				and the and finational articulties
425	HOVCA92		Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	
426	HPASA81	1333	Production of IL-6	IL-6 FMAT. IL-6 is produced by 1 cells and has strong effects on b cells. IL-0 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells the such functional activities.

		Kinase assay. JNK and p38 kinase assays for signal transduction that regulare cent production, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-
Regulation of viability or proliferation of immune cells (such as human eosinophil EOL-1 cells).	Production of GM-CSF	Activation of T-Cell p38 or JNK Signaling Pathway.
1334	1334	1335
HPBCU51	HPBCU51	HPDDC77
427	427	428

				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays are publicly available (e.g., through the ATCC).
			•	suspension-culture cell line with cytotoxic activity.
428	нРООС77	1335	Production of IL-2 and	LL-2 FMAT. LL-2 is the principal T cell factor that allows T cell expansion and differentiation into effector cells. Assays for immunomodulatory proteins secreted by TH1 cells that promote T cell and NK
			activation of T cells	cell growth and differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) to mediate immunomodulation, promote immune cell growth and differentiation, and/or
				mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
				used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J
				Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter
				6:138-160 (2000); Laduda et al., Immunology 94(4):496-502 (1998); and Powell et al., Immunol Rev
				165:287-300 (1998), the contents of each of which are herein incorporated by reference in its entirety.
				Human T cells that may be used according to these assays may be isolated using techniques disclosed
				herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the
				inymus and express a 1 cell receptor and CD3, CD4, or CD6. These cells inculate fulfiloral of cell-mediated imminity and may be preactivated to enhance responsiveness to imminomodulatory factors.
429	HPDWP28	1336	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			T cells	ut and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory

WO 02/102994 PCT/US02/08278

activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	the art and may be used or routinely modified to assess the ability of polypeptides of the invention the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	
	Activation of transcription through serum response element in immune cells (such as T-cells).	Production of TNF alpha by dendritic cells
	1337	1338
	HPFCL43	HPFDG48
	430	431

				al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
431	HPFDG48	1338	Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element in immune cells (such as in the human HMC-1 mast cell line) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Sherman, Immunol Rev 179:48-56 (2001); Malaviya and Uckun, J Immunol 168:421-426 (2002); Masuda et al., J Biol Chem 276:26107-26113 (2001), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
432	HPIAQ68	1339	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques

disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., 'Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the regulation of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of pancreatic beta cells. For example, the Cell Titer-Glo luminescent cell viability assay measures the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Exemplary assays that may be used or routinely modified to test regulation of viability and proliferation of pancreatic beta cells by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Friedrichsen BN, et al., Mol Endocrinol, 15(1):136-48 (2001); Huotari MA, et al., Endocrinology, 139(4):1494-9 (1998); Hugl SR, et al., J Biol Chem 1998 Jul 10;273(28):17771-9 (1998), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
	Production of IL-6	Regulation of viability and proliferation of pancreatic beta cells.
	1339	1340
	HPIAQ68	HPIBO15
	432	433

				may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
433	HPBO15	1340	Production of L-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the production and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting eells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
434	HP/BK12	1341	Insulin Secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Shimizu, H., et al., Endocr J, 47(3):261-9 (2000); Salapatek, A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4 (1998); Olson, L.K., et al., J Biol Chem, 271(28): 16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening 4: 194-204 (1999), the contents of each of which is berein incomorated by

				reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
				established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft Biochem J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
434	HPJBK12	1341	Regulation of apoptosis of immune cells (such as mast cells).	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body, and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al., I Biol Chem, 276(28):26107-26113 (2001); Yeatman CF 2nd, et al., J Exp Med, 192(8):1093-1103
				(2000); Lee et al., FEBS Lett 483(2-5): 122-126 (2000); Not et al., J vasc Res 37(3): 203-216 (2000), and Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
434	HPJBK 12	1341	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary endothelial cells
		,	-	that may be used according to these assays include human umbilical vein endothelial cells (HUVEC),

				which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
435	HPICL22	1342	Activation of Adipocyte ERK Signaling Pathway	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
435	HPJCL.22	1342	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomedulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary

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in the thymucell-mediated	unomodulatoo other cell tyl well known in vention (inclusion) to sention of an aluate the properties of an bibition of an other immunosts or antagoo :193-204(199) hasselt et al., 1999), the co cells that motherwise kno ch, when actifices.	nscription thr well-known well-known n factors and n the STAT6 ctivity of the nvention) incl Enzymol 216 et al., Blood 5 et al., Eur J 2000), the cor s used accord Killer cells the
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human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 188(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., it sentirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).
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	Production of TNF alpha by dendritic cells	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).
	1343	1344
	HPJCW04	HPJEX20
	436	437

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and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 373-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the ar.	<u></u>	<u>.                                    </u>
Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Activation of transcription through serum response
1345	1345	1346
HPMA122	HPMA122	HPMFP40
438	438	439

			element in immune cells (such as T-	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its clinicity. It can use that according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
044	HPMGJ45	1347	Upregulation of CD152 and activation of T cells	expression is restricted to activated T cells. CD152 is a Reduced CD152 expression has been linked to ses. Overexpression of CD152 may lead to impaired to dulatory proteins important in the maintenance of T codulatory proteins important in the maintenance of T cively on CD4+ and CD8+ T cells are well known in the sess the ability of polypeptides of the invention (includir the invention) to modulate the activation of T cells, ma I or cell-mediated immunity. Exemplary assays that test upregulation of cell surface markers, such as CD152, ay be used or routinely modified to test immunomodula (including antibodies and agonists or antagonists of the ys disclosed in Miraglia et al., J Biomolecular Screenin, es: a practical approach" Chapter 6:138-160 (2000); M; Costervegal et al., Curr Opin Immunol 11(3):294-300; Ostervegal et al., Curr Opin Immunol 11(3):294-300; Costervegal et al., Curr Opin Immunol T cells are size in or otherwise known in the art. Human T cells are symus and express a T Cell receptor and CD3, CD4, or iated immunity and may be preactivated to enhance ctors.
141	HPQAC69	1348	Upregulation of CD152 and	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated 1 cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of T cells	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of 1 cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of 1 cells, maintain 1

				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	
442	HPRBC80	1349	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	2 2 5 5
442	HPRBC80	1349	Activation of transcription through	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the	

invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the AP1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUFT cell line, which is an IL-2 and IL-4 responsive suspension-culture cell line.	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cells (INFA1) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
response element in immune cells (such as mast cells).	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Activation of transcription through NFAT response element in immune cells
	1349	1349
	HPRBC80	HPRBC80
·	44 2	442

			(such as T-cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844
				(1999); and Teseen et al., J Biol Chem 206(19):14,253-14,253 (1995), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
442	HPRBC80	1349	Activation of transcription through NFKB response	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of roundary description of the invention (including antibodies and agonists or anaponists of the invention)
			cells).	Include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992), Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
442	HPRBC80	1349	Activation of transcription through NFAT response	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			immune cells (such as natural killer cells).	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to

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response element in immune cells (such as T- cells).					
	Activation of This r transcription line. A through for the GATA-3 may tesponse antibo element in modu immune cells for tra (such as mast GAT, cells). Malrr (1988). Eur J et al., refere (e.g., included).	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).		1352 Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
ation of This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions.	Activation of This transcription Acti through acti NFAT well response invested	Activation of transcription through NFAT response element in	1352 Activation of transcription through NFAT response element in	1352 Activation of transcription through NFAT response element in	Activation of transcription through NFAT response element in

Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Activation of Assays for the activation of transcription through the CD28 response element are well-known in the art transcription and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells.  CD28  Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 and agonists or antagonists of the invention) include assays disclosed in Berger et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Buscher et al., J Biol Chem 3(1):552-560 (1997); he contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.	Activation of Assays for the activation of transcription through the Gamma Interferon Activation Site (UAS) response transcription through GAS response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or functions. Exemplary assays for transcription through the GAS response element at involude assays disclosed in Berger et al., Gene delis).
	1352	1352
	HPWAY46	HPWAY46
	445	445

				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).
445	HPWAY46	1352	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
446	HPWAZ95	1353	Production of IL-10 and activation of T-cells.	Assays for production of LL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of LL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate LL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
447	HPWDJ42	1354	Activation of transcription	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of

polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000). De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.		Assays for the activation of transcription through the NFKB response element are well-known in the and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of neuronal genes. Exemplary assays for transcription through the NFKB response element that may be used or routinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gill IS, et al., Neurobiol Dis, 7(4):448-461 (2000); Tamatani M, et al., I Biol Chem, 274(13):8531-8538 (1999); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
through NFAT response in immune cells (such as T- cells).	Activation of T-Cell p38 or JNK Signaling Pathway.	Activation of transcription through NFKB response element in neuronal cells (such as
	1355	1355
	HPZAB47	HPZAB47
	844	844

210:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 63:0342-0340 (1905); valie biadquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Neuronal cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary neuronal cells that may be used according to these assays include the SKNMC neuronal cell line.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention (including antibodies and agonists or antagonists of the invention include, for example, the assays disclosed in Miragila et al., Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et
216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 83:6342-6346 (1988); Valle blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser e al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Neuronal cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary neuronal cells that may be used according to these assays include the SKNMC neuronal cell line.	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193. 204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999) and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et
cells).	Upregulation of CD152 and activation of T cells	Activation of T-Cell p38 or JNK Signaling Pathway.
	1355	1356
	HPZAB47	HRAAB15
	448	449

Karrin, Nature 410(6824):37-40 (2001); and Cobb MIH, Prog Biophys Mol Biol 17(134/497-500 (1999); here contents of each of which are here in increpropared by reference in its entirey. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells used according to these assays include the CTLL cell line, which is an IL-2 dependent that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent may be used according to these assays include the CTLL cell line, which is an IL-2 dependent that may be used to proinfarmantary cytokine. Filty glosys a central role in the immune system and it is considered to be a mategorists at an inhibit type Beper cell functions are well known in the art and may be used or routinely activities and inhibit ITR Deper cell functions are well known in the art and may be used or routinely activities and inhibit ITR Deper cell functions are well known in the art and may be used or routinely and the activities and inhibit ITR Deper cell functions are well known in the art and may be used or routinely and the activities and the activities of the invention of real may be used or routinely modified to test and the activities of the invention of T cells. So because at all 10 modern and the activities of the invention of a services and agonities or immunomodulatory proteins evaluate the production of cytokines, such as interferron gamma (IPR). Gonzalez et al., 10 in La Anal 8(5):225-233 (1993), and Rheumanology (Oxford) 33(3):214-20 (1999). Gonzalez et al., 10 in La Anal 8(5):225-233 (1993), and Rheumanology (Oxford) 33(3):214-20 (1999). Behin et al., Annu Rev Immunol 15:43-95 (1997), and Rheumanology (Oxford) 33(3):214-20 (1999). Park In an interal. Annu Rev Immunol 15:43-95 (1997), and Rheumanology (Oxford)			
HRAAB15 1356 HRABA80 1357	Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent	50	
HRAAB15 1		Production o IFNgamma using a T cells	Insulin Secretion
Ξ.		1356	1357
449		HRAAB15	HRABA80
			450

				(1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
450	HRABA80	1357	Activation of Endothelial Cell ERK Signaling Pathway.	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Berra et al., Biochem Pharmacol 60(8):1171-1178 (2000); Gupta et al., Exp Cell Res 247(2):495-504 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.
450	HRABA80	1357	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory

activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); incorporated by reference in its entirety. Human T cells that may be used according to these assays may incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary be used according to enhance T hese cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Regulation of Assays for the regulation of transcription of Malic Enzyme are Well-Known III the art and transcription of Malic Enzyme, a key enzyme in agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR promoter contains two direct repeat (DR1)- like elements MEp and other transcription of Malic Enzyme (in assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in assays that may be used or routinely modified to test of (1998); invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998); invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 274(25):17997-8004 (1999); lipenberg, A. et al., Biol Chem, 272(32):20108-20117 (1997); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362–368 (1992), the contents according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely in the annexe preadipocyte cell line (213-2-121) and or antipocyte to adipocyte to adipocyte to adipocyte to adipocyte to adipocyte or antipocyte under annominate differentiation culture conditions.	Activation of Kinase assay. INK and p38 kinase assays for signal transduction that regulate cell proliteration, a trivation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) proliferation, activation, and apoptosis. Exemplary assays to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-for JNK and p38 kinase activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
	1358 H 0 0 0 E E E E E E E E E E E E E E E E	1358
	HRACD15	HRACD15
	HRA	HRA
	451	451

					T		
disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);	Nowland et al., "Lymphocytes: a practical approach," Chapter 6:138-160 (2000); and Verhasselt et al., "I Rowland et al., "Lymphocytes: a practical approach," Chapter 6:138-160 (2000); and Verhasselt et al., "Lymphocytes: a practical approach," of which are herein incorporated by reference in its Immunol 158:2919-2925 (1997), the contents of each of which are assays may be isolated using entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T	Cell projuteration and full control of the transferring is a major iron carrying protein that is CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is CD71 is expressed predominantly on cells that are actively proliferating. essential for cell proliferation. CD71 is expressed predominantly on cells, and most proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides cells are well known in the art and may be used or routinely modified to modulate the of the invention (including antibodies and agonists or antibodies. Exemplary assays that test for	activation of T cells, and/or mediate humoral or cell-mediated infindinty.  Immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the immunomodulatory proteins evaluate the upregulation of cell surface markers, such assays that may be used or routinely modified to test immunomodulatory activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include, for example, the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention) include and the assays disclosed in Miraglia et al., T Biomolecular Screening 4:193-invention include and the assays disclosed in Miraglia et al., T Biomolecular Biomolecular Biomolecular Biomolecular Biomolecular Biomolecular Biomolecular Biomolecular Bi	et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of minimary may be isolated using reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human techniques disclosed herein or otherwise known in the art. Furnant Cells are primary or CD8. These lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These calls mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to	immunomodulatory factors.  Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention the art and may be used or routinely modified to assess the ability of polypeptides of the invention) to regulate the serum response factors	and modulate the expression of genes involved in growth. Exemplary assays for transcription through and modulate the expression of genes involved in growth. Exemplary of the polypeptides of the invention the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (include assays disclosed in Berger et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al.,	al., Orene ob. 1-10 (1775).  Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus Genes 12(2):105-117 (1997); and Black et al., Virus G
		Upregulation of CD71 and activation of T cells			Activation of transcription	through serum response element in	immune cells (such as T-cells).
		1360			1361		
		HRDDV47			HRDFD27		
		453			454		

т		<b>&gt;</b>	. S
may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	Assays for the activation of transcription through the NFKB response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cens, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
	Activation of Endothelial Cell p38 or JNK Signaling Pathway.	Activation of transcription through NFKB response element in immune cells (such as natural killer cells).	Production of TNF alpha by dendritic cells
	1361	1361	1362
	HRDFD27	HRDFD27	HRTAE58
	454	454	455

immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha be used or routinely modified to test immunomodulatory activity of polypeptides of the invention al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 18(11):3886-3890 (1198); Dahlen et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T impolification and functional activities.	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention the United assays disclosed in Berger et (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et (including antibodies and Agonists or antagonists of the invention) 16:362-368 (1992); Henthorn et al., al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on D cens. Lo parine.  Induced IgB production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgB production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease. Assays for immunomodulatory and plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation and produced by a large variety of cells where the expression level is strongly differentiation factor proteins produced by a large variety of cells including antibodies and regulated by cytokines, growth factors, and hormones are well known in the art and may be used or regulated to assess the ability of polypeptides of the invention (including antibodies and routinely modified to assess the ability of polypeptides of the invention and differentiation and modulate agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
	Activation of transcription through serum response element in immune cells (such as T-cells).	Production of IL-6
	1363	1364
	HSATR82	HSAUK57
	456	457

cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate cell proliferation and functional activities.
Production of TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, TNF alpha by fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
cells ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa) and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J   Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
techniques disclosed herein or otherwise known in the art. fruman denormed cens are anugen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
cell proliferation and functional activities.
Activation of This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell
transcription line. Assays for the activation of transcription through the NFKB response element are well-known in the
through  Art and may be used of founded in the invention to regulate NFKB transcription factors and NFKB  NFKB
Se
.E
immune cells of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
(snch as

and agonists or antagonists of the invention) include assays disclosed in Miragila et al., J. Distriction Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in	proliteration and unctionial activities.  IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly differentiation factor proteins produced by a large variety of cells where the expression level is strongly differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention and upregulation of T cell proliferation and production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and functional activities of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention of the invention of these assays may be isolated using entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Assays for the activation of transcription through the contraction of polypeptides of the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription antibodies and agonists or antagonists of the invention a wide variety of cell functions. For example, a factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
	Production of IL-6	Activation of transcription through cAMP response
	1368	1369
	HSAVK10	HSAWZ41
	461	462

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contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the arr.	Assays for the activation of transcription through the API response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al, Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et
adipocytes.	Activation of transcription through AP1 response element in immune cells (such as Tcells).	Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).
	1369	6981
	HSAWZ41	HSAWZ41
	462	462

al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. For example, a reporter assay (which measures increases in transcription inducible from a NFKB responsive element in EOL-1 cells) may link the NFKB element to a repeorter gene and binds to the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element activity of polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through NFAT response element in immune cells (such as mast cells).
	1369	1369
	HSAWZ41	HSAWZ41
	462	462

(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature

				is a suspension culture of IL-2 and IL-4 responsive T cells.
462	HSAWZ41	1369	Activation of transcription through serum response element in immune cells (such as a natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirely. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
463	HSAXA83	1370	Activation of transcription through serum response element in immune cells (such as Teells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
464	HSAYM40	1371	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate

				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
				Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reterence in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
464	HSAYM40	1371	Activation of transcription through	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			response element in immune cells	assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Chilan and Mahnak in Frayamol 716:346;348 (1992); Henthom et al., Proc Natl Acad Sci USA
			cells).	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):2931-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which
465	HSDAJ46	1372	Activation of transcription through	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response element in immune cells (such as	functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl
			natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al.,

ling to nd	own in factors bugh ention ger et al., 7), the sed ills that pension	in E AR AR AR applary me (in the '8); ger, et ontents
ints of each of which are he cording to these assays are ils that may be used accorder cell line with cytolytic is	Element (SRE) are well-kalypeptides of the invention regulate the serum response assays for transcription that the polypeptides of the invude assays disclosed in Be 362-368 (1992); Henthorn Genes 12(2):105-117 (199itety. T cells that may be itely. T cells that may be itely. T cells that suppose C). Exemplary mouse T chi is an IL-2 dependent such	own in the art and may be it (including antibodies and the Enzyme, a key enzyme is stimulted by insulin. It is stimulted by insulin. It is didentified as putative P transcription of Malic Enzy d agonists or antagonists or crinol, 12(11):1778-91 (19 so. I., et al., J Biol Chem, 1:20108-20117 (1997); Be 216:362-368 (1992), the c patocytes that may be usee C) and/or may be routinely: assays includes the H4III
and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR response elements. ME promoter may also responds to AP1 and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in adipoocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):1778-91 (1998); Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, I., et al., J Biol Chem, 274(25):17997-8004 (1999); Ilpenberg, A., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays includes the H4IIE rat generated. Exemplary hepatocytes that may be used according to these assays includes the H4IIE rat liver hepatoma cell line.
and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. NK cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human NK cells that may be used according these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for the activation of transcription the art and may be used or routinely modif (including antibodies and agonists or anta and modulate the expression of genes invothe SRE that may be used or routinely modificulding antibodies and agonists or anta al., Gene 66:1-10 (1998); Cullen and Malr Proc Natl Acad Sci USA 85:6342-6346 (1 content of each of which are herein incorp according to these assays are publicly avai may be used according to these assays inconture of T cells with cytotoxic activity.	egulation of transcription of red to assess the ability of gonists of the invention) to alic enzyme is involved in ins two direct repeat (DR1) nts. ME promoter may also be used or routinely modify polypeptides of the inventide assays disclosed in: Str. et al., Mol Endocrinol 8004 (1999); Ijpenberg, A. [0 (1988); and, Cullen, B., h is herein incorporated by see assays are publicly avail mplary hepatocytes that micell line.
and Yeseen et al., incorporated by re publicly available these assays inclu cytotoxic activity.	Assays for the at the art and may (including antil and modulate the SRE that m (including antil al., Gene 66:1-1 Proc Natl Acad content of each according to the may be used acculture of T cel	Assays for the regulation routinely modified to as agonists or antagonists of lipogenesis. Malic enzy promoter contains two dresponse elements. ME assays that may be used adipoccytes) by polypepinvention) include assay Garcia-Jimenez, C., et a 274(25):17997-8004 (15 al., Gene 66:1-10 (1988) of each of which is here according to these assay generated. Exemplary h liver hepatoma cell line.
cells).	Activation of transcription through serum response element in immune cells (such as T-cells).	Regulation of transcription of Malic Enzyme in adipocytes
	1373	1373
	НЅЪЕК49	HSDEK49
	466	466

IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirery. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and function	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, a activation, or apoptosis in eosinophils include assays disclosed and/or
Production of IL-6	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).
1374	1375
HSDER95	HSDEZ20
467	468

cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep;104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.		This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
	Activation of Adipocyte PI3 Kinase Signalling Pathway	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).
	1376	1376
	HSDJA15	HSDJA15
	469	469

				et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by
				reference in its entirety. Mast cells that may be used according to these assays are publicly available
				include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
469	HSDJA15	1376	Production of IL-5	IL-5 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells, mast cells, basophils, and eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+ cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cell function, modulate B cell Ig production, modulate immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ohshima et al., Blood 92(9):3338-3345 (1998); Jung et al., Eur J Immunol 25(8):2413-2416 (1995); Mori et al., J Allergy Clin Immunol 106(1 Pt 2):558-564 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomy factors.
410	HSDSB09	1377	Regulation of transcription via DMEF1 response element in adipocytes and preadipocytes	Assays for the regulation of transcription through the DMEF1 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the DMEF1 response element in a reporter construct (such as that containing the GLUT4 promoter) and to regulate insulin production. The DMEF1 response element is present in the GLUT4 promoter and binds to MEF2 transcription factor and another transcription factor that is required for insulin regulation of Glut4 expression in skeletal muscle. GLUT4 is the primary insulin-responsive glucose transporter in fat and muscle tissue. Exemplary assays that may be used or routinely modified to test for DMEF1 response element activity (in adipocytes and pre-adipocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed inThai, M.V., et al., J Biol Chem, 273(23):14285-92 (1998); Mora, S., et al., J Biol Chem, 275(21):16323-8 (2000); Liu, M.L., et al., J Biol Chem, 269(45):28514-21 (1994);

"Identification of a 30-base pair regulatory element and novel DNA binding protein that regulates the human GLUT4 promoter in transgenic mice", J Biol Chem. 2000 Aug 4;275(31):23666-73; Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362–368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Adipocytes and pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the mouse 3T3-L1 cell line which is an adherent mouse preadipocyte cell line. Mouse 3T3-L1 cells are a continuous substrain of 3T3 fibroblasts developed through clonal isolation. These cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell tine that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Kesponse Element (SALL) are well and the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum response element in pre-
	1377	1377
	HSDSB09	HSDSB09
	470	470

				21 1 1 1 2 1 C. 1750 05.6242 6246 (1089), and Black of al Virus Genes (2(2): 105-117 (1997), the
		_	adipocytes.	Froc Nail Acad Sci USA 63:0342-0340 (1200), and Diach of any Science in its entirety. Pre-adipocytes that may be
				used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1
				cells. 513-L1 is an adherent mouse preaduperyte central and under a commerce of the conversion under cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under
				appropriate differentiation conditions known in the art.
410	HSDSB09	1377	Activation of	Assays for the activation of training in the octain to consider the invention
			transcription	the art and may be used or routinely modified to assess the ability of polypophics of the inventory
			through	(including antibodies and agoinsts of antagonists of the included by a segas for transcription through
			serum	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	finching antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
			(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
	•			may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
470	HSDSB09	1377	Regulation of	Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or
			transcription	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			of Malic	agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in
			Enzyme in	lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME
			adipocytes	promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR
			•	response elements. ME promoter may also responds to API and other transcription factors. Exemplary
				assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in
				adipoocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 12(11):11/8-91 (1998);
				Garcia-Jimenez, C., et al., Mol Endocrinol, 8(10): 1361-9 (1994); Barroso, I., et al., J Biol Chem,
			_	274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1991); Berger, et
				al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:302-308 (1992), the contents
				of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used
				according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary hepatocytes that may be used according to these assays includes the H41IE fat

				liver hepatoma cell line.
470	HSDSB09	1377	Stimulation of Calcium Flux in pancreatic beta cells.	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. For example, the FLPR assay may be used to measure influx of calcium. Cells normally have very low concentrations of cytosolic calcium compared to measure influx of calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Satin LS, et al., Endocrinology, 136(10):4589-601 (1995);Mogami H, et al., Endocrinology, 136(7):2960-6 (1995); Richardson SB, et al., Biochem J, 288 ( Pt 3):847-51 (1992); and, Meats, JE, et al., Cell Calcium 1989 Nov-Dec;10(8):535-41 (1989), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line established from Syrian hamster islet cells transformed with SV40. These cells express glucagon, somatostatin, and glucocorticoid receptors. The cells recrete insulin, which is stimulated by glucose and glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs: Lord and Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343, 1981.
470	HSDSB09	1377	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays

				include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
470	HSDSB09	1377	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell tine established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
470	HSDSB09	1377	Activation of transcription through NFKB response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFkB signaling pathway in HMC-1 human mast cell line. Activation of NFkB in mast cells has been linked to production of certain cytokines, such as L-6 and L-9. Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Stassen et al., J Immunol 166(7):4391-8 (2001); and Marquardt and Walker, J Allergy Clin Immunol 105(3):500-5 (2000), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an human mast cells that may be used according to these assays include the HMC-1 cell line, which is an

immature human mast cell line established from the peripheral blood of a patient with mast cell leukema, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription througn the Signal Transducers and Acuracus of Transcription (STAT6) response element in immune cells (such as in the human HMC-1 mast cell line) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Maln, Methods in Enzymol include assays disclosed in Berger et al., Froc Natl Acad Sci USA 85:6342-6346 (1988); Sherman, Immunol Rev 179:48-56 (2001); Malaviya and Uckun, J Immunol 168:421-426 (2002); Masuda et al., J Biol Chem 276:26107-26113 (2001), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.  Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.  Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
	Activation of transcription through STAT6 response element in immune cells (such as mast cells).	Stimulation of insulin secretion from pancreatic beta cells.
	1377	1377
	HSDSB09	HSDSB09
	470	470

470	HSDSB09	1377	Activation of	This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell
			transcription	line. Assays for the activation of transcription through the NFKB response element are well-known in the
			through	art and may be used or routinely modified to assess the ability of polypopuloes or the information (moderne).
			response	annixonies and agonists of antagonists of the internal, to regard to transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
_			element in	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			immune cells	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			(such as	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			basophils).	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al, Int
	•			Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by
				reference in its entirety. Basophils that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these
				assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an
			•	immature prepasoobilic cell line that can be induced to differentiate into mature basophils.
470	HSDSB00	1377	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
? *	COTECTE		transcription	(STAT6) response element are well-known in the art and may be used or routinely modified to assess the
			through	ability of notynearides of the invention (including antibodies and agonists or antagonists of the invention)
			STAT6	to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	rest STATE response element activity of the polypeptides of the invention (including antibodies and
			immine cells	avanists or anaponists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998);
			(ench as T-	Cullen and Malm. Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA
			cells)	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
			./22)	69(7): 1521-1523 (2000); Curiel et al., Eur J Immunol 27(8): 1982-1987 (1997); and Masuda et al., J Biol
				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which
				is a suspension culture of IL-2 and IL-4 responsive T cells.
470	HSDSB09	1377	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
) : 			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate serum response factors and
			serum	modulate the expression of genes involved in growth and upregulate the function of growth-related genes
		<del></del>	response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or

antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cutten and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.	Assays for muscle cell proliferation are well known in the art and may be used or rounnely incurred assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays disclosed in: Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins 4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation." J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor beta on proliferation of L6 and embryonic porcine myogenic cells." J Cell Physiol Jun;143(3):524-8 (1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on b cells. IL-0 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
immune cells (such as natural killer cells).	Myoblast cell proliferation	Production of IL-6
	1378	1378
	HSDSE75	HSDSE75
	471	471

				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
472	HSFAM31	1379	Production of IL-10 and activation of T-cells.	Assays for production and functional activities.  Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a manjor role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are
473	HSHAX21	1380	Activation of Adipocyte ERK Signaling Pathway	Forestated via in vito contact under the potatring contacts assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9): 1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2): 126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824): 37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays

				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	——г
473	HSHAX21	1380	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).	<del></del>
474	HSIAS17	1381	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodics and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate inflammation and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Immunol 28(11):3886-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	
474	HSIAS17	1381	Production of IL-6	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,	

			transcription through cAMP response element (CRE) in pre- adipocytes.	and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-
477	HSKHZ81	1384	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al., FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
478	HSLCQ82	1385	Activation of transcription through serum response element in immune cells (such as T-	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the

			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
	_			culture of T cells with cytotoxic activity.
479	HSLJG37	1386	Production of	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and
			GM-CSF	fibroblasts. GM-CNF regulates differentiation and proliteration of granulocytes- macrophage progenitors
				atin entitatives attitutely to the differentiation of dendritic cells and monocytes, and increases antitien
				presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory
				proteins that promote the production of GM-CSF are well known in the art and may be used or routinely
				modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation
				of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of
				cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely
				modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein
				incorporated by reference in its entirety. Natural killer cells that may be used according to these assays
				are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or
				otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic
				activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also
				recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
480	HSNAB12	1387	Production of	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and
			MCP-1	act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be
				used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and
				modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate
				the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the
				activation of monocytes and T cells. Such assays that may be used or routinely modified to test
				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol

s in cell	or and oor actory tinely or codulate s that test (IFNg), or ening ening (0); 2 (1998); 2 (1998); 3 (1999), a a T Cell nay be	e art and nintain T st for and the
158:2919-2925 (1997), the contents of each of which are neterin incorporated by following techniques. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists of modulatory proteins evaluate the production of cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	CD152 FMAT. CD152 (a.k.a. C1LA-4) expression is restricted to activated 1 cons. CD151 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and any be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
	to to	oo of
	Production IFNgamma using a T cells	Upregulat of CD152 and activation T cells
	1388	1389
	HSODE04	HSPBF70
	184	482

				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
483	HSQCM10	1390	Regulation of viability or proliferation of immune cells (such as human eosinophil EOL-1 cells).	Assays for the regulation (i.e. increases or decreases) of viability and proliferation of cells in vitro are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate viability and proliferation of eosinophil cells and cell lines. For example, the CellTiter-Gloô Luminescent Cell Viability Assay (Promega Corp., Madison, WI, USA) can be used to measure the number of viable cells in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eosinophil cell lines that may be used according to these assays are publicly available and/or may be routinely generated. Exemplary eosinophil cells that may be used according to these assays include EOL-1 Cells.
	нѕосміо	1390	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are

				with culture under The notarizing conditions using peripheral blood lymphocytes
				generated to m cord blood.
484	HSSAJ29	1391	Activation of transcription through AP1 response element in innunune cells (such as T-cells).	Assays for the activation of transcription through the API response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test API-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
485	HSSDX51	1392	Production of IL-6	II6 FMAT. IL6 is produced by T cells and has strong effects on B cells. IL-b participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells that may be used according to these assays may be isolated using cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.

transcription the art and may be used or routinely modified to assess the ability of polypeptides of the invention through antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et immune cells.  Such as T. Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line.  transcription Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the through activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT
1393	1394	1394
HSSFT08	HSSGD52	HSSGD52
486	487	487

			(such as natural killer	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
			cells).	(1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
HSS1C35		1395	<del> </del>	Caspase Apoptosis. Assays for caspase apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			immune cells (such as mast	antagonists of the invention) to regulate caspase protease-mediated apoptosis in immune cells (such as, for example, in mast cells). Mast cells are found in connective and mucosal tissues throughout the body,
			cells).	and their activation via immunoglobulin E-antigen, promoted by T helper cell type 2 cytokines, is an important component of allergic disease. Dysregulation of mast cell apoptosis may play a role in allergic
		<del></del>	_	disease and mast cell tumor survival. Exemplary assays for caspase apoptosis that may be used or routinely modified to test capase apoptosis activity induced by polypeptides of the invention (including
			_	antibodies and agonists or antagonists of the invention) include the assays disclosed in: Masuda A, et al.,
				J B101 Chem, 2/0(28):2010/-20113 (2001); Yeatman CF 2nd, et al., J EXP Med, 192(8):1093-1103 (2000); Lee et al., FEBS Lett 485(2-3): 122-126 (2000); Nor et al., J Vasc Res 37(3): 209-218 (2000); and
				Karsan and Harlan, J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein
			-	incorporated by reference in its entirety. Immune cells that may be used according to these assays are
				publicty available (e.g., through commercial sources). Exemplary immune cells that may be used according to these assays include mast cells such as the HMC human mast cell line.
HSTB186	╁╴	1396	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
	-		pue	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			I cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ I cells are well known in the art and
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
			•	immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et

al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the regulation of transcription through the FAS promoter element are well-and may be used or routinely modified to assess the ability of polypeptides of the inventibodies and agonists or antagonists of the invention) to activate the FAS promoter reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. regulated by many transcription factors including SREBP. Insulin increases FAS gen livers of diabetic mice. This stimulation of transcription is also somewhat glucose del Exemplary assays that may be used or routinely modified to test for FAS promoter ele hepatocytes) by polypeptides of the invention (including antibodies and agonists or an invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97 Roder, K., et al., Buchem, 260(3):743-51 (1999); Oskouian B, et al., Biochem. (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzym (1992), the contents of each of which is herein incorporated by reference in its entiret may be used according to these assays, such as H4IIE cells, are publicly available (e.g. ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, derivatives.	Upregulation CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomdulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention in the art and antibodies and agonists or antagonists of the invention of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activation (including antibodies and agonists or antagonists of the
	Regulation of transcription through the FAS promoter element in hepatocytes	Upregulation of CD152 and activation of T cells
	1397	1397
	HSUB W09	HSUBW09
	490	490

invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Frigamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. IFNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate humoral or cell-mediated inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (IFNg). and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:188-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Billiau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway.
	Production of FN gamma using a T cells	Activation of transcription through cAMP response
	1398	1399
	HSVAM10	HSVBU91
	491	492

				A.M., et al., Mol Endocrinol, 13(8):1305-17 (1999); Filipsson, K., et al., Ann N Y Acad Sci, 865:441-4
				(1998); Olson, L.K., et al., J Biol Chem, 271(28):16544-52 (1996); and, Miraglia S et. al., Journal of Biomolecular Screening 4:103,204 (1999), the contents of each of which is herein incomparated by
				reference in its entirety. Pancreatic cells that may be used according to these assays are publicly
			•	available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that
				may be used according to these assays include HITT15 Cells. HITT15 are an adherent epithelial cell line
				established from Syrian hamster islet cells transformed with SV40. These cells express glucagon,
				somatostatin, and glucocorticoid receptors. The cells secrete insulin, which is stimulated by glucose and
				glucagon and suppressed by somatostatin or glucocorticoids. ATTC# CRL-1777 Refs. Lord and
				Ashcroft. Biochem. J. 219: 547-551; Santerre et al. Proc. Natl. Acad. Sci. USA 78: 4339-4343; 1981.
492	HSVBU91	1399	Activation of	Assays for the activation of transcription through the CD28 response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to stimulate L-2 expression in T cells.
			CD28	Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			element in	and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10
			immune cells	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J
			cells).	Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the JURKAT cell line, which is a suspension culture of leukernia
				cells that produce IL-2 when stimulated.
493	HSXCG83	1400	Production of	L6 FMAT. L6 is produced by T cells and has strong effects on B cells. L6 participates in L4
			IL-6	induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
	_			plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				differentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and

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diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); of the invention) include assays disclosed in Miraglia et al., J Bomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.	Production of IL-10 and activation of T-cells.	Production of IL-2 FMAT. IL-2 is the principal 1 cell factor that allows 1 cell expansion and 1 cell and NK effector cells. Assays for immunomodulatory proteins secreted by TH1 cells that promote T cell and MK activation of cell growth and differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention, promote immune cell growth and differentiation, and/or invention) to mediate immunomodulation, promote immune cell growth and differentiation, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-2, and the activation of T cells. Such assays that may be evaluate the production of cytokines, such as IL-2, and the activation of T cells. Such assays that may be antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Elemunology 94(4):496-502 (1998); and Powell et al., Immunol Rev
	HSXEC75	нѕхеоо6
	494	495

				165:287-300 (1998), the contents of each of which are herein incorporated by reference in its entirety.
				Human 1 cells that may be used according to these assays may be isolated using techniques discreted the herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the
				thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
496	HSYAV50	1403	Activation of transcription	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription
			cAMP	factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway.
			element	CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
			adipocytes.	assays for transcription through the cAMP response element that may be used or routinely modified to
			,	test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in Berger et al., Gene 60:1-10 (1996); Cuiten
				6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety.
				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the
				ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according
				to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a
				continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-
				adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
496	HSYAV50	1403	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
_			transcription	element are well-known in the art and may be used or routinely modified to assess the ability of
			through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
				reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used

				according to these assays are publicly available (e.g., through the ATCC).
496	HSYAV50	1403	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
497	HSYAV66	1404	Production of IL-6	IL-6 FMAT. IL-6 is produced by I cells and has strong effects on D cents. IL-9 particupates in andiced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists or antagonists or antagonists or antagonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
498	HSYAZ50	1405	Activation of	Assays for the activation of transcription through the NFKB response element are well-known in the art

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Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the SUPT cell line, that may be used according to these assays are publicly available (e.g., through the ATCC).	Activation of Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that regulate cell proliferation or differentiation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9): 1101-1110 (1998); Le Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 107(2): 126-132 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys (e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.	Activation of Kinase assay. JNK kinase assays for signal transduction that regulate cell proliteration, activation, or signaling apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity invention (including antibodies and agonists or antagonists of the invention) to that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed any forem as a since tet al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage allergic reactions, they are recruited to tissues and mediate the inflammatory response of late stage allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, a activation, or apoptosis in eosinophils include assays disclosed and/or
	1407	1407
	HSYBG37	HSYBG37
·	200	200

cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils" J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3 Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to inhibit JUN N-terminal kinase phosphorylation" J Allergy Clin Immunol; Sep:104(3 Pt 1):565-74 (1999); the contents of each of which are herein incorporated by reference in its entirety.	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliteration, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998). Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reactions; they are recruited to tissues and mediate the inflammatory response of late stage allergic reactions. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang IP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils" J Exp Med; Feb 2: 187(3):415-25 (1998); J Allergy Clin Immunol; Oct; 122(1):20-7 (2000); Hebestreit H, et al., "Disruption of senticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal ki	IL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Production of IL-6
	1408	1409
	HSZAF47	HT3SF53
	501	502

·				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or agonists or antagonists of the invention to mediate immunomodulation and differentiation and modulate T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as L6, and the stimulation and upregulation of T cell proliferation and functional activities. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J 160-2010, 2006 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J 160-2010 (2000); and Verhasselt et al., J
				entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
503	HT5GJ57	01410	Activation of transcription through AP1 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the AP1 response element that may be used or routinely modified to test AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol 18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
503	HT5GJ57	1410	Production of MCP-1	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate

				activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays that may be used or routinely modified to test and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell experience.
504	HTADX17	1411	Activation of transcription through NFT response in immune cells (such as T-cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) polypeptides of the activation of including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.
\$6	HTADX17	1411	Activation of transcription through GAS response element in immune cells (such as Teells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl

				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used
504	HTADX17	1411	Activation of transcription	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention (including and may be used or routinely modified to assess the ability of polypeptides of the invention).
			through NFKB	antibodies and agonists of amagonists of the invention to regulate in the invention through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response element in	NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells (such as T-	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
_				herein incorporated by reference in its entirety. Exemplary human I cells, such as the MOL14, that may be used according to these assays are publicly available (e.g., through the ATCC).
505	HTDAF28	1412	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
			Adipocyte	regulate cell proliferation or differentiation are well known in the art and may be used or routinely
			ERK	modified to assess the ability of polypeptides of the invention (including announce and agoings of
			Pathway	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 3/9(8-9):1101-1110 (1998); Le
				Marchand-Brustel Y, Exp Clin Endocrinol Diabetes 10/(2/:120-132 (1999); Nytiakis jivi, Diochem 300, S 24.70 48 (1900); Chang and Karin Name 410(6824):3740 (2001); and Cobb MH. Prop Biophys
		_		Mol Biol 71(34):479-500 (1999); the contents of each of which are herein incorporated by reference in
				its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays
				include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain
				of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like
				conversion under appropriate differentiation conditions known in the art.
505	HTDAF28	1412	Upregulation	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells.
			of HLA-DR	Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid
			and	arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins
			activation of	expressed on MHC class II expressing 1 cells and antigen presenting cells are well knowll ill use are all

			T cells	may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1992); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
505	HTDAF28	1412	Upregulation of CD69 and activation of T cells	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells. CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Siegel, Eur J Immunol 25(12):3215-3221 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomy and energe or enhance responsiveness to immunomy and energe or enhance responsiveness to immunomy and energe or enlander engance and express.
505	HTDAF28	1412	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a

			115	eosinophils that stimulate eosinophil function and B cell Ig production and promote polarization of CD4+
				cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability
				of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to madiate
				immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test
				for immunomodulatory proteins evaluate the production of cytokines, such as IL-5, and the stimulation of
				eosinophil function and B cell Ig production. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Sorgering
				4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 0:138-100 (2000);
				Onshima et al., Blood 92(9):3336-3349 (1998); Jung et al., Eur J Illununoi 23(9):2413-2410 (1792); Moit
				et al., J Allefty Cliff Infinuncial 100(1 ft 12).20-20-4 (2000), and reference in its entirety. Human T cells
				(1997), the contents of each of which are never the content and the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of the content of th
				that may be used according to these assays may be isolated using recrimiques disclosed lifeting
				otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
				and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
				immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
507	HTEB128	1414	Upregulation	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is
			of CD71 and	essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating.
			activation of	Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating
			T cells	cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides
				of the invention (including antibodies and agonists or antagonists of the invention) to modulate the
				activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
		_		invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra
				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by
				reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human
	-			lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
				cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to
				immunomodulatory factors.

208	HTEDF80	1415	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152 and	negative regulator of 1 cell proliferation. Reduced CD132 expression has been fluxed to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	in the maintenance of T cell some social and the maintenance of T cell some social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social social soc
			ı ceiis	may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that lest for immunity.
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
	_			204 (1999); Kowland et al., "Lymphocytes: a practical approach" Chapter 0:136-100 (2000); McCoy et
				an, inmining Cent Biol 17(1).1-19 (1999), Ossica vegatiet an, Can Opin minimum 17(19).27-1-303 (1997), and Saito T. Chir Onin Imminol 10(3):313-321 (1998), the contents of each of which are herein
				incorporated by reference in its entirety. Human T cells that may be used according to these assays may
				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
509	HTEDY42	1416	Activation of	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell
			transcription	line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays
			through	for the activation of transcription through the GATA3 response element are well-known in the art and
			GATA-3	may be used or routinely modified to assess the ability of polypeptides of the invention (including
			response	antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and
			element in	modulate expression of mast cell genes important for immune response development. Exemplary assays
			immune cells	for transcription through the GATA3 response element that may be used or routinely modified to test
			(such as mast	GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or
			cells).	antagonists of the invention) include assays disclosed in Berger et al., Gene 60:1-10 (1998), Culien and
				Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:0342-6346
				(1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmetro et al.,
				Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson
				et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by
				reference in its entirety. Mast cells that may be used according to these assays are publicly available

				(e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral
				blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cens.
809	HTEDY42	1416	Upregulation of CD154	CD154 FMAT. CD154 (a.k.a., CD40L) expression is induced following activation of 1 ceils.  Interraction between CD154 and CD40 on B cells is required for correct antibody class switching and
			and	germinal center formation. Mutations in CD154 are linked to immunodeficiencies and increased
			activation of	susceptibility to infections. Assays for immunomodulatory proteins important for antibody class contributed and TH1 function and expressed on activated T helper lymphocytes are well known in the art
			2133	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, modulate
				antibody class switching, mediate TH1 function, and/or mediate humoral or cell-mediated immunity.
				Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface
				markers, such as CD154, and the activation of T cells. Such assays that may be used or routinely
				modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J
				Riomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter
				6:138-160 (2000): Mackey et al., J Leukoc Biol 63(4):418:428 (1998); and Skoy et al., 164(7):3500-3505
				(2000), the contents of each of which are herein incorporated by reference in its entirety. Human T cells
			-	that may be used according to these assays may be isolated using techniques disclosed herein or
				otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus
				and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
				immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
610	HTFFI 165	1417	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
275		:	transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription
			cAMP	factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a
			response	3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway.
			element	CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
			(CRE) in pre-	contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary
			adipocytes.	assays for transcription through the cAMP response element that may be used or routinely modified to
				test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen
				and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-
				6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem

273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety.  Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipoce-like conversion under appropriate differentiation conditions known in the art.	regulation of Assays for the regulation of transcription of Malic Enzyme are well-known in the art and may be used or transcription of Malic Enzyme, in agonists or antagonists of the invention) to regulate transcription of Malic Enzyme, a key enzyme in lipogenesis. Malic enzyme is involved in lipogenesisand its expression is stimulted by insulin. ME promoter contains two direct repeat (DR1)- like elements MEp and MEd identified as putative PPAR response elements. ME promoter may also responds to AP1 and other transcription factors. Exemplary assays that may be used or routinely modified to test for regulation of transcription of Malic Enzyme (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention include assays disclosed in: Streeper, R.S., et al., Mol Endocrinol, 8(10):1361-9 (1994); Barroso, L. et al., J Biol Chem, 274(25):17997-8004 (1999); Ijpenberg, A., et al., J Biol Chem, 272(32):20108-20117 (1997); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays includes the mouse 3T3-L1 cell line. 3T3-L1 is a mouse preadipocyte cell line (adherent). It is a continuous substrain of 3T3 fibroblasts developed through clonal isolation. Cells undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation culture conditions.	Myoblast cell Assays for muscle cell proliferation are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention to stimulate or inhibit myoblast cell proliferation. Exemplary assays for myoblast cell proliferation that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays disclosed in:  Soeta, C., et al. "Possible role for the c-ski gene in the proliferation of myogenic cells in regenerating skeletal muscles of rats" Dev Growth Differ Apr;43(2):155-64 (2001); Ewton DZ, et al., "IGF binding proteins-4, -5 and -6 may play specialized roles during L6 myoblast proliferation and differentiation" J Endocrinol Mar;144(3):539-53 (1995); and, Pampusch MS, et al., "Effect of transforming growth factor
	1417	1417
	HTEFU65	HTEFU65
	510	510

(1990); the contents of each of which are herein incorporated by reference in their entirety. Exemplary myoblast cells that may be used according to these assays include the rat myoblast L6 cell line. Rat myoblast L6 cells are an adherent rat myoblast cell line, isolated from primary cultures of rat thigh muscle, that fuse to form multinucleated myotubes and striated fibers after culture in differentiation media.	Fingamma FMAT. IFNg plays a central role in the immune system and is considered to be a proinflammatory cytokine. FNg promotes TH1 and inhibits TH2 differentiation; promotes IgG2a and inhibits IgE secretion; induces macrophage activation; and increases MHC expression. Assays for immunomodulatory proteins produced by T cells and NK cells that regulate a variety of inflammatory activities and inhibit TH2 helper cell functions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, modulate TH2 helper cell function, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as Interferon gamma (FNg), and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):225-233 (1995); Bliliau et al., Ann NY Acad Sci 856:22-32 (1998); Boehm et al., Annu Rev Immunol 15:749-795 (1997), and Rheumatology (Oxford) 38(3):214-20 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes. Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
1990); the contents of each of which are her nyoblast cells that may be used according to nyoblast L6 cells are an adherent rat myobla nuscle, that fuse to form multinucleated mynedia.	FNgamma FMAT. IFNg plays a central role proinflammatory cytokine. IFNg promotes 7 inhibits IgE secretion; induces macrophage 8 mmunomodulatory proteins produced by T activities and inhibit TH2 helper cell function modified to assess the ability of polypeptide antagonists of the invention) to mediate immitted the assess the ability of polypeptide matagonists of the invention) to mediate immitted the activation of T cells. Such assays the manunomodulatory proteins evaluate the and the activation of T cells. Such assays the manunomodulatory activity of polypeptides antagonists of the invention) include the ass art 193-204 (1999); Rowland et al., "Lympho Gonzalez et al., J Clin Lab Anal 8(5):225-22 Boehm et al., Annu Rev Immunol 15:749-7 the contents of each of which are herein incobe used according to these assays may be is in the art. Human T cells are primary huma receptor and CD3, CD4, or CD8. These cel preactivated to enhance responsiveness to it	Assays for measuring secretion of insulin ar modified to assess the ability of polypeptide antagonists of the invention) to stimulate in FMAT using anti-rat insulin antibodies. Insglucose and also by certain proteins/peptide Exemplary assays that may be used or routi pancreatic cells) by polypeptides of the inve
	Production of IFN gamma using a T cells	Stimulation of insulin secretion from pancreatic beta cells.
	1417	1417
	нтегиб	нтегиб5
	210	510

and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.		tion of IL.4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cells polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL.4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol
	Activation of transcription through NFAT response in immune cells (such as Tcells).	Production of IL-4
	1418	1419
	HTEG142	HTEHR24
	511	512

				1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be
				used according to these assays may be isolated using techniques disclosed neterin or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be
512	HTEHR24	1419	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152 and	negative regulator of 1 cell proliferation. Reduced CD132 expression has been fluxed to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of 1 cells, maintain 1
				cell homeostasis, and/of mediate humora of cell-incutated illumining. Exemplary assays una test to
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CLISA, and the
				activation of 1 certs. Such assays that may be used of 1 outlined incurred to test intrinsiculations
				activity of polypeptides of the invention (including antibodies and agonists of antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et
				al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
				incorporated by reference in its entirety. Human T cells that may be used according to these assays may
		_		be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
513	HTEHU31	1420	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
			L-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides
				and antibodies of the invention (including agonists or antagonists of the invention) to modulate L-10
				production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:
				Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and
				Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-

196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.	w ₩	of Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.
	Activation of transcription through NFAT response element in immune cells (such as mast cells).	Production of IL-10 and activation of T-cells.
	1421	1421
	нтени93	нтен из
	514	514

				Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
515	нте.	1422	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).
515	нтегрз6	1422	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in:  Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL-10, IL-13, IL-5 and IL-6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
516	HTEIV80	1423	Activation of transcription	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including

			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Culten and Malm, Methods in Entzylitor
			(such as I-	216:362-368 (1992); Henthorn et al., Froc Nati Acad Sci OSA 63:0342-0349 (1996), Diack of al., ************************************
			cells).	berein incomposated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
				be used according to these assays are publicly available (e.g., through the ATCC).
517	HTEJN13	1424	Activation of	Kinase assay. Kinase assays, for example an Elk-1 kinase assay, for ERK signal transduction that
;			Adipocyte	regulate cell proliferation or differentiation are well known in the art and may be used or routinely
			ERK	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			Signaling	antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation.
			Pathway	Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-
			•	induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forter et al., Biol Chem 379(8-9):1101-1110 (1998); Le
				Marchand-Bristel Y Exn Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc
				Symm 64:29-48 (1999): Chang and Kartin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys
				Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in
				its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available
				(e.g. through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays
				include 3T3-1. cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain
				of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like
_			-	conversion under appropriate differentiation conditions known in the art.
517	HTEIN13	1424	Upregulation	CD69 FMAT. CD69 is an activation marker that is expressed on activated T cells, B cells, and NK cells.
			of CD69 and	CD69 is not expressed on resting T cells, B cells, or NK cells. CD69 has been found to be associated with
			activation of	inflammation. Assays for immunomodulatory proteins expressed in T cells, B cells, and leukocytes are
			Tcells	well known in the art and may be used or routinely modified to assess the ability of polypeptides of the
				invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of
				T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD69, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
				activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-

		204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Ferenczi et al., J Autoimmun 14(1):63-78 (200); Werfel et al., Allergy 52(4):465-469 (1997); Taylor-Fishwick and Signal Bur I Immunol 25(12):3715-3721 (1995); and Afetra et al., Ann Rheum Dis 52(6):457-460
		(1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or
		otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated
		immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
HTELMI6 14	1425 Production of MIP1alpha	MIP-lalpha FMAT. Assays for immunomodulatory proteins produced by activated dendritic cells that upregulate monocyte/macrophage and T cell chemotaxis are well known in the art and may be used or
		routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, modulate chemotaxis, and
		modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the
		production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the
		activation of monocytes/macrophages and 1 cens. Such assays that that we used of routines morning the invention (including antibodies
_		and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
		Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
		(2000); Satinaporn and Elemin, J. R. Con. Surg. Edito 43(1):3717 (2001); Dianes et al., J. Langer minimorns (2001); J. 2001 (2001); Satinaporn and Pardelli et al., J. Leukoc Biol
		65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety.
		Human dendritic cells that may be used according to these assays may be isolated using techniques
		disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
	· ·	suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell
		proliferation and functional activities.
HTELMI6 14	1425 Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
	transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
	through	(including antibodies and agonists or antagonists of the invention) to regulate serum response factors and
	serum	modulate the expression of genes involved in growth and upregulate the function of growth-related genes
	response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
	element in	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or
	immune cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
	(such as T-	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
	cells).	(1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117

(1997), the content of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce IL-2 when stimulated.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipoce-like conversion under appropriate differentiation conditions known in the art.	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast
	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Activation of transcription through serum response element in pre-adipocytes.
	1426	1426
	HTEPG70	HTEPG70
	519	519

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				cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
519	нтер <i>G70</i>	1426	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukernia, and exhibits many characteristics of immature mast cells.
519	HTEPG70	1426	Activation of transcription through NFAT response element in immune cells (such as mast cells).	This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. Activation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., J Immunol 165(12):7215-7223 (2000); Hutchinson and McCloskey, J Biol Chem 270(27):16333-16338 (1995), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to

				these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature
519	HTEPG70	1426	Activation of transcription through through NFKB response element in immune cells (such as basophils).	This reporter assay measures activation of the NFkB signaling pathway in Ku812 human basophil cell This reporter assay measures activation of transcription through the NFkB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFkB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the modulate expression of immunomodulatory genes. Exemplary assays for transcription through the of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 16:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Marone et al., Int Arch Allergy Immunol 114(3):207-17 (1997), the contents of each of which are herein incorporated by reference in its entirety. Basophils that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human basophil cell lines that may be used according to these assays include Ku812, originally established from a patient with chronic myelogenous leukemia. It is an immature prebasophilic cell line that can be induced to differentiate into mature basophils.
	HTEPG70	1426	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
519	HTEPG70	1426	Activation of transcription through	Assays for the activation of transcription through the Serum Response Element (NKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes

			response element in immune cells (such as natural killer cells).	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
520	HTGAU75	1427	Upregulation of CD71 and activation of T cells	CD71 FMAT. CD71 is the transferrin receptor. Transferrin is a major iron carrying protein that is essential for cell proliferation. CD71 is expressed predominantly on cells that are actively proliferating. Assays for immunomodulatory proteins expressed on activated T cells, B cells, and most proliferating cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD71, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Afetra et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
521	HTGEP89	1428	Activation of transcription through serum response element in immune cells (such as T-	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the

<b> </b>			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with corroxic activity.
	HTHBG43	1429	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assays to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
	нтнв 643	1429	Activation of transcription through serum response element in immune cells (such as natural killer cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and cytotoxic activity.
	HTHCA18	1430	Production of GM-CSF	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF

				plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
524	HTHD194	1431	Production of IL-6	LL-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4 induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6 induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease, plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and differentiation factor proteins produced by a large variety of cells where the expression level is strongly regulated by cytokines, growth factors, and hormones are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and differentiation and function. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and functional activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T

				cell moliferation and functional activities.
525	HTHDS25	1432	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
526	нтлма95	1433	Activation of transcription through cAMP response element (CRE) in preadipocytes.	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a 3T3-LI/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway. CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary assays for transcription through the cAMP response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem 273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety. Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a preadipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
526	нтлма95	1433	Activation of JNK Signaling	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to

			transcription through CD28 response element in immune cells (such as T- cells).	and may be used of fouritiety intention to assess the about of perpendic of the invention of perpendic of the invention of perpendic of the invention of stimulate IL-2 expression in T cells.  Exemplary assays for transcription through the CD28 response element that may be used or routinely modified to test CD28-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and lacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the according to the acco
526	НТЛМА95	1433	Activation of transcription through NFAT response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of L-2 and L-4 responsive T
526	HTJMA95	1433	Activation of transcription through NFKB response element in immune cells	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol

			(such as T-cells).	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
526	нтлма95	1433	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Thelper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
527	HTJML.75	1434	Production of GM-CSF	GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomedulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160

				(2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein
		_		are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic
				activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also recognize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
528	HTLBE23	1435	Activation of transcription	Assays for the activation of transcription through the AP1 response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
			through AP1	and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary assays for transcription through the API response element that may be used or routinely modified to test
			element in	AP1-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and
			(such as T-	Machine Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			cells).	(1988); Kellanan et al., J Biol Client 272(+7):Josop 25011 (1777); Chang C, 1200 (1988); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
				which are herein incorporated by reference in its entirety. T cells that may be used according to these
				assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
				according to these assays include the CTLL cert time, which is an IL 2 deponded any of the control of the with extotoxic activity.
529	HTLFE42	1436	Activation of	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription
			transcription	(STAT6) response element are well-known in the art and may be used or routinely inodition to assess the
			through	ability of polypeptides of the fifteening farmonics and response of multiple genes. Exemplary
			response	assays for transcription through the STAT6 response element that may be used or routinely modified to
			element in	test STAT6 response element activity of the polypeptides of the invention (including antibodies and
			immune cells	agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 00:1-10 (1936), C., Ilan and Malm Methode in Engamed 216:362-368 (1992). Henthorn et al., Proc Natl Acad Sci USA
			(such as 1-	85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation
			.(2)	69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol
				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in
				its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary T cells that may be used according to these assays include the SUP1 cell line, which
530	HTLFE57	1437	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used of fourthery

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modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux in immune cells (such as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther, 269(3):891-896 (1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 74(2) \$89-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the THP-1 monocyte cell line.	IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known
ICAM-1	Activation of transcription through serum response element in immune cells (such as T-cells).	Calcium flux in immune cells (such as monocytes)	Production of IL-4
	1438	1439	1440
	нтгоезі	HTLHY 14	нтсп32
	531	532	533

in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-4, and the stimulation of immune cells, such as B cells, T cells, macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., Tymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-283 (1194); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rheumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); agonists or antagonists of the invention) include assays disclosed in Berger et al., Transplantation 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., Biol Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary rat natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for the activation of transcription through the Nuclear Factor of Activated 1 cens (NTA1) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory
	Activation of transcription through STAT6 response element in immune cells (such as natural killer cells).	Activation of transcription through NFAT
	1441	1441
	HTLV19	HTLIV19
	534	534

			response element in	functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including
			immune cells	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl
		-	natural killer	Acad Sci USA 85:6342-6346 (1988); Aramburu et al., J Exp Med 182(3):801-810 (1995); De Boer et al., J Exp T. T. T. T. T. T. T. T. T. T. T. T. T.
			cells).	and Yeseen et al., J Biol Chem 268(19): 14285-14293 (1993), the contents of each of which are herein
				incorporated by reference in its entirety. NK cells that may be used according to these assays are
			·	publicly available (e.g., through the ATCC). Exemplary numan IVA cens that had be used accounting to these assays include the NK-YT cell line, which is a human natural killer cell line with cytolytic and
				cytotoxic activity.
534	HTLIV19	1441	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate serum response factors and
			serum	modulate the expression of genes involved in growth and upregulate the function of growth-related genes
			response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or
			immine cells	anagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and
			(such as	Malm. Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			natural killer	(1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
			cells).	(1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may
_				be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells
				that may be used according to these assays include the NK-YT cell line, which is a human natural killer
				cell line with cytolytic and cytotoxic activity.
535	HTNB091	1442	Production of	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely
}			ICAM-1	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or
				routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al.,
				Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995);
				and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the
				contents of each of which is herein incorporated by reference in its entirety. Cells that may be used
				according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely
				generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle
				Cells (AOSMC); such as bovine AOSMC.

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Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human umbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the initiation and perpetuation of inflammation and secretion of IL-8 may play an important role in recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.	3   Production of   Endothelial cells, which are cells that line blood vessels, and are involved in functions that include, but
		on of A as as in the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	on of .
Activation of transcription through serum response element in immune cells (such as Teells).	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Production of IL-8 by by endothelial cells (such as Human Umbilical Cord Endothelial Cells).	Producti
1443	1443	1443	1443
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			ICAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used in ICAM production assays include human umbilical vein endothelial cells (HUVEC), and are available from commercial sources. The expression of ICAM (CD54), a intergral membrane protein, can be upregulated by cytokines or other factors, and ICAM expression is important in mediating immune and endothelial cell interactions leading to immune and inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety.
536	HTOAK16	1443	Production of IL-13	IL-13 FMAT. IL-13 enhances IgM, IgG, and IgE production and induces FCER1. IL-13 has anti-inflammatory activity on monocytes and macrophages. Assays for immunomodulatory proteins produced by T cells that inhibit activation and release of cytokines by macrophages are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate cytokine release, stimulate immune cells through the binding of IL-13 and IL-4 receptors, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-13, the inhibition of cytokines released by macrophages. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Ohshima et al., Blood 92(9):3338-3345 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
537	нторк73	1444	Activation of transcription through NFAT response in	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or

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			immune cells (such as T- cells).	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce	
538	HTODO72	1445	Upregulation of CD152 and activation of T cells	IL-2 when stimulated.  CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention of (including antibodies and agonists or antagonists of the activity of polypeptides of the invention of (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention (including antibodies and agonists or antagonists of the activity of polypeptides of the invention of (1999); Costervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are primary human lymp	
539	HTOGR42	1446	Activation of transcription through serum	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through	

				have cytolytic and cytotoxic activity) or primary NK cells.
540	нтонр42	1447	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in altergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma "Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are a class of an in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
541	нтонм15	1448	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of c-Jun NH2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils." Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric

				oxide in eosinophils" J Exp Med: Feb 2:187(3);415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3
				Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is
				associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of prednisolone to
				the contents of each of which are herein incorporated by reference in its entirety.
542	нтонт18	1449	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in berger et
			immune ceils	41., OFTHE OST-110 (1995), CUITIEN AND THE AUTHOR IN ENGINEER AND A A A A CA CA TEST OF A STATE AND A A A CA CA CA CA CA CA CA CA CA CA CA
			(Such as 1-	Froc in all Acad Sci USA 62.0342-0340 (1986), and black of all, thus Scientify 12 11 (1997), and
			cells).	COINCIN OF SECTION WHICH ALC DECEMBER 19 10 10 10 10 10 10 10 10 10 10 10 10 10
				according to these assays are publicly available (e.g., through the AICC). Exemplary mouse 1 cens that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
542	HTOHT18	1449	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
			TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			dendritic	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
			cells	ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			-	to mediate immunomodulation, modulate inflammation and cytotoxicity. Exemplary assays that test for
				immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha
_				(TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may
				be used or routinely modified to test immunomodulatory activity of polypeptides of the invention
_				(including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et
				al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach"
				Chapter 6:138-160 (2000); Verhasselt et al., Eur J Immunol 28(11):3886-3890 (1198); Dahlen et al., J
				Immunol 160(7):3585-3593 (1998); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et
	-			al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference
				in its entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.

	-		==	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			Apoptosis	antagonists of the invention) to promote caspase protease-mediated apoptosis. Induction of apoptosis in
				endothelial cells supporting the vasculature of tumors is associated with tumor regression due to loss or timor blood supply. Exemplary assays for caspase apoptosis that may be used or routinely modified to
				test capase apoptosis activity of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) include the assays disclosed in Lee et al., FEBS Lett 485(2-3): 122-120
				(2000), INDICE 44., 3 Vasc 1005 (2007). 200 (2005), and reference in its entirety.
				Endothelial cells that may be used according to these assays are publicly available (e.g., through
				commercial sources). Exemplary endothelial cells that may be used according to these assays include
				bovine aortic endothelial cells (OADC), wilcit are all example of chooling the very missing accessing the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the prop
				permeability, vascular tone, and immune cell extravasation.
543	HTOIZ02	1450	Production of	L-6 FMAT. IL-6 is produced by T cells and has strong effects on B cells. IL-6 participates in IL-4
}				induced IgE production and increases IgA production (IgA plays a role in mucosal immunity). IL-6
				induces cytotoxic T cells. Deregulated expression of IL-6 has been linked to autoimmune disease,
				plasmacytomas, myelomas, and chronic hyperproliferative diseases. Assays for immunomodulatory and
				rifferentiation factor proteins produced by a large variety of cells where the expression level is strongly
				regulated by cytokines, growth factors, and hormones are well known in the art and may be used or
				routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			•	agonists or antagonists of the invention) to mediate immunomodulation and differentiation and modulate
				T cell proliferation and function. Exemplary assays that test for immunomodulatory proteins evaluate the
				production of cytokines, such as IL-6, and the stimulation and upregulation of T cell proliferation and
				functional activities. Such assays that may be used or routinely modified to test immunomodulatory and
				diffferentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists
				of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999);
				Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Verhasselt et al., J
				Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its
				entirety. Human dendritic cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting
				cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T
				cell proliferation and functional activities.
544	HTOJA73	1451	Production of	Production of   IFNgamma FMAT. IFNg plays a central role in the immune system and is considered to be a

			immune cells (such as T-cells).	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
546	нтрв <i>w</i> 79	1453	Activation of transcription through NFAT response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Serfling et al., Biochim Biophys Acta 1498(1):1-18 (2000); De Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
546	HTPBW79	1453	Activation of transcription through NFKB response element in immune cells (such as Tcells).	Assays for the activation of transcription through the NFKB response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T

				last
547	HTSEW17	1454	Stimulation of insulin secretion from pancreatic beta cells.	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.  Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li, M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995); and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable insulin secretion. References: Asfari et al. Endocrinology, 1992–130:167.
547	HTSEW 17	1454	Activation of transcription through NFKB response element in immune cells (such as B-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in: Gri G, et al., Biol Chem, 273(11):6431-6438 (1998); Pyatt DW, et al., Cell Biol Toxicol 2000;16(1):41-51 (2000); Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Lmmunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Immune cells that may be used according to these assays are publicly available to.g., through the ATCC). Exemplary immune cells that may be used according to these assays include the Reh B-cell line.
548	HTTBI76	1455	Stimulation of insulin secretion	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by

		ion of IL-4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known
from pancreatic beta cells.	Upregulation of CD69 and activation of T cells	Production of IL-4
	1455	1456
	HTTB176	HTTDB46
	548	549

human in culture based on eosinophil cells. Eosinophils and mediate the influence according to the cosinophil cells that the influence according to the cosinophil cells that the influence and mediate the influence and mediate the influence and mediate the influence and mediate immunotive fibroblasts, smooth effects on a variety ability of polypept to mediate immunotive cells in munomodulator (TNFa), and the in be used or routinel (including antibod al., J Biomolecular Chapter 6: 138-160 Immunot 160(7):3 al., J Leukoc Biol in its entirety. Hut techniques disclos cells in suspension cells in suspension cells in suspension and human EOL-1 human eosinophil may have a potent cells)	ls). [s]. [s]. [s]. [s]. [s]. [s]. [s]. [s]	cells. Eosinophils mediate the influence based on rells. Eosinophils seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed as a variety ability of polypeptic on mediate immunormunomodulator (TNFa), and the in be used or routinel (including antibod al., J Biomolecular Chapter 6:138-160 [Immunol 160(7):3 al., J Leukoc Biolin is sentirety. Huit is entirety. Huit ecchniques disclosticells in suspensior cells in suspensior cells in suspensior cell proliferation a Assay that measur EOL-1 human eos production by FM invention (includin invention (includin may have a potent according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed according to the seed accor	in culture based on quantitation of the ATP present which signals the presence of metabolically active cells. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammutory response of late stage allergic reaction. Eosinophil cell lines that may be used according to these assays include EOL-1 Cells.  INFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fiftherolasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fiftherolasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic fiftherolasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic perfects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention of cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" al., J Euckoc Biol 65:822-828 (1999); Verhasselt et al., J Immunol 28(11):3886-3890 (1198); bahlen et al., J Immunol 160(7):388-3593 (1998); Verhasselt et al., J Immunol 180(11):388-389 may be isolated using reckniques disclosed herein or otherwise known in the art. Human dendritic cells at antigen presenting cells in suspension culture, which, when activated by antigen and or cytokines, initiate and upregulate T cell proliferation and functional activities.  Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human ecsinophil cell
HTWCT03	1457	Activation of transcription through GATA-3	astimal.  This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including

ntion) to regulate GATA3 transcription factors and for immune response development. Exemplary assays ement that may be used or routinely modified to test as of the invention (including antibodies and agonists or used in Berger et al., Gene 66:1-10 (1998); Cullen and Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 and Biol 64:563-571 (1999); Rodriguez-Palmero et al., and Flavell, Cell 89(4):587-596 (1997); and Henderson contents of each of which are herein incorporated by ised according to these assays are publicly available ist cells that may be used according to these assays re human mast cell line established from the peripheral xhibits many characteristics of immature mast cells.	All signating pathway in Purice-1 furthan mass cent time. It to cytokine and chemokine production. Assays for the actor of Activated T cells (NFAT) response element are nagonists of the invention) to regulate NFAT magonists of the invention) to regulate NFAT response element that may be used or routinely of polypeptides of the invention (including antibodies ude assays disclosed in Berger et al., Gene 66:1-10 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci Biochem Cell Biol 31(10):1221-1236 (1999); Ali et al., In and McCloskey, J Biol Chem 270(27):16333-16338 in and McCloskey, J Biol Chem 270(27):16333-16338 emplay human mast cells that may be used according to these assays are emplary human mast cells that may be used according to is an immature human mast cell line established from is an immature human contained in the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stablished from the stabli	well-known in the art and may be used or routinely the invention (including antibodies and agonists or expression. For example, FMAT may be used to meaure
antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukermia, and exhibits many characteristics of immature mast cells in the activities of immature and exhibits many characteristics of immature mast cells in the activities of immature and exhibits many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many characteristics of immature mast cells in the activities many charac	This reporter assay measures activation of the NFA1 signaling pathway in LIMC-1 numan mass centivation of NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT transcription factors and modulate expression of genes involved in immunomodulatory functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci (1998), and Turner et al., J Exp Med 188:527-537 (1998), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure
response element in immune cells (such as mast cells).	Activation of transcription through NFAT response element in immune cells (such as mast cells).	Production of VCAM in endothelial
	1457	1457
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·	250	550

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are cells nesis, l cells th EC), wh sociated n of	vasation vasation vasation value, vasation value value value value and mune and mune and says that olfe BE, 2365 (18) (0), the	Assays for the activation of transcription through the Serum Response Element (SKE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors an modulate the expression of genes involved in growth and upregulate the function of growth-related gene in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists of antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-634 (1988); Benson et al., Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-11 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that ma be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer
ial cells and angioger and the lia (HUV lbrane-as avasation xpression	ins that in the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contr	LE) are work the involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute involute invo
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al cells.  are not li on. Exe ein endo f (CD10 tributes t els; thus	noolved no assays nurces. T kines or interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti interacti	onse Ele of polyl) to regulate the fi ne SRE ti (includi ti al., Ger Roc N, Proc N, Proc N, Black et eference
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the upregulation of cell surface VCAM-I expresssion in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	Endothelial cells, which are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used in ICAM production assays include human umbilical vein endothelial cells (HUVEC), and are available from commercial sources. The expression of ICAM (CD54), a intergral membrane protein, can be upregulated by cytokines or other factors, and ICAM expression is important in mediating immune and endothelial cell interactions leading to immune and inflammatory responses. Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety.	Assays for the activation of transcription through the Serum Kesponse Element (JKE) are Well-Known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate serum response factors and modulate the expression of genes involved in growth and upregulate the function of growth-related genes in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these assays include the NK-YT cell line, which is a human natural killer
the ulline the vascumas, may are a prote lymp in pro	Endo are n Exen endo (CD; expr infla be us be us and; and; and,	Assa the a the a the a the a the a mod mod mod mod mata Mall (198 (198 be u be u that that the a that that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the a that the
cells (such as human umbilical vein endothelial cells (HUVEC))	Production of ICAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Activation of transcription through serum response element in immune cells (such as natural killer cells).
		1458
	HTWCT03	HTWDF76
	550	551

production of MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory assays that test for immunomodulatory proteins evaluate the production of cell activation. Exemplary assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in proliferation and functional activities.		HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ 1 cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins
MCP-1	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Upregulation of HLA-DR and activation of T cells
1459	1460	1460
HTWJK32	HTWKE60	HTWKE60
	553	553

				evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1982); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
554	HTXCV12	1461	Activation of transcription through serum response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an L-2 dependent suspension culture of T cells with cytotoxic activity.
554	HTXCV12	1461	Activation of transcription through NFKB response element in immune cells (such as T-cells).	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may

			-	be used according to mess assays are publicly a variable color in the second of Artivated T cells (NFAT)
555	HTXDW56	1462	Activation of transcription through NFAT response in immune cells (such as T-cells).	Assays for the activation of transcription though the Assays for the activation of transcription though the Assays for the activation of transcription that are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antisponse element that may be used or functions. Exemplary assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl 66: 1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Boer et al., Int J Biochem Cell Biol 31(10):1221-1236 (1999); Fraser et al., Eur J Immunol 29(3):838-844 (1999); and Yeseen et al., J Biol Chem 268(19):14285-14293 (1993), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to publicly available (e.g., through the ATCC). Exemplary human T cells that may be used according to these assays are these assays include the JURKAT cell line, which is a suspension culture of leukemia cells that produce 1L-2 when stimulated.
555	HTXDW56	1462	Activation of transcription through GAS response element in immune cells (such as Tcells).	Assays for the activation of transcription through the Gamma Interferon Activation Site (CAS) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell functions. Exemplary assays for transcription through the GAS response element that may be used or routinely modified to test GAS-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene antibodies and agonists of the invention) include assays disclosed in Berger et al., Gene Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4 cell line, that may be used according to these assays are publicly available (e.g., through the ATC7.
555	HTXDW56	1462	Activation of transcription through NFKB response element in	Assays for the activation of transcription through the NTEAD response defined at the invention (including and may be used or routinely modified to assess the ability of polypeptides of including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)

immune cells (such as T-cells).	1462 Activation of transcription through NFKB response element in neuronal cells (such as SKNMC cells).	1462 Activation of transcription through GAS response element in immune cells (such as Tcells).	Activation of Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention of premium response factors.
.= 3	2	2	<del></del>
	HTXDW56	HTXDW56	HTXFL30
	555	555	556

			response element in immune cells (such as T-cells).	and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
556	HTXFL30	1463	Production of TNF alpha by dendritic cells	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, 1 cells, fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic effects on a variety of cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the production and cytotoxicity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines such as tumor necrosis factor alpha (TNFa), and the induction or inhibition of an inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Verhasselt et al., Immunol 18(211):386-3890 (1198); Dahlen et al., J Immunol 160(7):3585-3593 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
556	HTXFL30	1463	Regulation of proliferation and/or differentiation in immune cells (such as mast cells).	Kinase assays, for example an Elk-1 kinase assay for ERK signal transduction that regulates cell proliferation or differentiation, are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and differentiation. Exemplary assays for ERK kinase activity that may be used or routinely modified to test ERK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in: Ali H, et al., J Immunol, 165(12):7215-7223 (2000); Tam SY, et al., Blood, 90(5):1807-1820 (1997); Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Berra et al., Biochem

				Pharmacol 60(8):1171-1178 (2000); Gupta et al., Exp Cell Res 247(2):495-504 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH. Prog Biophys Mol Biol 71(3-4):479-500 (1999); the
				contents of each of which are herein incorporated by reference in its entirety. Exemplary immune cells
				that may be used according to these assays include numan mast cells such as tile filler.
557	HTXKP61	40 <u>4</u>	Activation of	Assays for the activation of transcription (trough the inverse esponse estimate as wear shown in the angle and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and
			NFKB	modulate expression of immunomodulatory genes. Exemplary assays for transcription through the
			response	NFKB response element that may be used or rountinely modified to test NFKB-response element activity
			element in	of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
			immune cells	include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol
			(such as T-	216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus
			cells).	Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are
				herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may
				be used according to these assays are publicly available (e.g., through the ATCC).
558	HUDBZ89	1465	Activation of	Assays for the activation of transcription through the cAMP response element are well-known in the art
			transcription	and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through	antibodies and agonists or antagonists of the invention) to increase cAMP, regulate CREB transcription
			cAMP	factors, and modulate expression of genes involved in a wide variety of cell functions. For example, a
			response	3T3-L1/CRE reporter assay may be used to identify factors that activate the cAMP signaling pathway.
			element	CREB plays a major role in adipogenesis, and is involved in differentiation into adipocytes. CRE
	·		(CRE) in pre-	contains the binding sequence for the transcription factor CREB (CRE binding protein). Exemplary
			adipocytes.	assays for transcription through the cAMP response element that may be used or routinely modified to
			•	test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists
				or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen
				and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-
				6346 (1988); Reusch et al., Mol Cell Biol 20(3):1008-1020 (2000); and Klemm et al., J Biol Chem
				273:917-923 (1998), the contents of each of which are herein incorporated by reference in its entirety.
				Pre-adipocytes that may be used according to these assays are publicly available (e.g., through the
				ATCC) and/or may be routinely generated. Exemplary mouse adipocyte cells that may be used according
			-	to these assays include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a
				continuous substrain of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-
_				adipocyte to adipose-like conversion under appropriate differentiation conditions known in the art.
558	HUDBZ89	1465	Production of	1465 Production of GM-CSF FMAT. GM-CSF is expressed by activated T cells, macrophages, endothelial cells, and

			GM-CSF	fibroblasts. GM-CSF regulates differentiation and proliferation of granulocytes- macrophage progenitors and enhances antimicrobial activity in neutrophils, monocytes and macrophage. Additionally, GM-CSF plays an important role in the differentiation of dendritic cells and monocytes, and increases antigen presentation. GM-CSF is considered to be a proinflammatory cytokine. Assays for immunomodulatory proteins that promote the production of GM-CSF are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and modulate the growth and differentiation of leukocytes. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as GM-CSF, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Ye et al., J Leukoc Biol (58(2):225-233, the contents of each of which are herein incorporated by reference in its entirety. Natural killer cells that may be used according to these assays are publicly available (e.g., through the ATCC) or may be isolated using techniques disclosed herein or otherwise known in the art. Natural killer (NK) cells are large granular lymphocytes that have cytotoxic activity but do bind antigen. NK cells show antibody-independent killing of tumor cells and also reconize antibody bound on target cells, via NK Fc receptors, leading to cell-mediated cytotoxicity.
559	HUFBY15	1466	Activation of T-Cell p38 or INK Signaling Pathway.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Ghap et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.
999	HUFEF62	1467	Upregulation of CD152 and	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated 1 cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired

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immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):2313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Caspase Apoptosis Rescue. Assays for caspase apoptosis rescue are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to inhibit caspase protease-mediated apoptosis. Exemplary assays for caspase apoptosis that may be used or routinely modified to test caspase apoptosis. Exemplary polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Romeo et al., Cardiovasc Res 45(3): 788-794 (2000); Messmer et al., Br J Pharmacol 127(7): 1633-1640 (1999); and J Atheroscler Thromb 3(2): 75-80 (1996); the contents of each of which are herein incorporated by reference in its entirety. Endothelial cells that may be used according to these assays are publicly available (e.g., through commercial sources). Exemplary endothelial cells that may be used according to these assays include bovine aortic endothelial cells that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation.	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity
activation of T cells	Protection from Endothelial Cell Apoptosis.	Activation of JNK Signaling Pathway in
ë F	1468	1468
	HUKAH51	HUKAHS1
	261	561

562	HUKBT29	1469	immune cells (such as eosinophils).  Production of IL6 by primary human aortic smooth normal dermal derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman derman	that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Pornet et al., Biol Chem 379(8-9): 1101-1110 (1998); Chupt et al., Exp Cell Res 247(2): 495-504 (1999); Khais IM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal transduction, cell proliferation, activation, or apoptosis in eosinophils include assays disclosed and/or cited in: Zhang JP, et al., "Role of caspases in dexamethasone-induced apoptosis and activation of C-Jun MT2-terminal kinase and p38 mitogen-activated protein kinase in human eosinophils. If Exp Med; Feb 2; 187(3):415-25 (1998); J Allergy Clin Immunol 1999 Sep;104(3) Pt 1):565-74; and, Sousa AR, et al., "In vivo resistance to corticosteroids in bronchial asthma is associated with enhanced phosyphorylation of JUN N-terminal kinase and failure of preduction of Interleukin-6 (IL-6) by either human aortic smooth muscle cells or normal human dermal fibroblasts may be obtained from commercial sources; these cells are important structural and functional components of blood vessels and connective itssue, respectiviely. Interleukin-6 (IL-6) is a key molecule in orhorion and inflammation and implicated in the progression of alterosclerosis, stroke, arthrits and other vascular and inflamation factors, and chronic hyperproliferative diseases.
			cells (without	to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation and production of $IL-6$ .
			costimulation	
			with TNFalpha).	

				preactivated to enhance responsiveness to immunomodulatory factors.
562	HUKBT29	1469	<u> </u>	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull: 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL 10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL 10, IL 13, IL 5 and IL 6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
563	HUSAT94	1470	Production of MIP Lalpha	MIP-lalpha FMAT. Assays for immunonoulatory proteins produced by activated constitutions are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulatory proteins evaluate the modulate T cell differentiation. Exemplary assays that test for immunomodulatory proteins evaluate the production of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of chemokines, such as macrophage inflammatory protein 1 alpha (MIP-1a), and the activation of monocytes/macrophages and T cells. Such assays that may be used or routinely modified to test immunomodulatory and chemotaxis activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4: 193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Erentin, J R Coll Surg Ednb 45(1):9-19 (2001); Drakes et al., Transp Immunol 8(1):17-29 (2000); Verhasselt et al., J Immunol 158:2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
564	HUSBA88	1471		Production of   IL-13 FMAT. IL-13 enhances IgM, IgG, and IgE production and induces FCEK1. IL-13 has anti-

			IL-13	inflammatory activity on monocytes and macrophages. Assays for immunomodulatory proteins
		<del></del>		art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate cytokine release, stimulate immune cells through the binding of IL-13 and IL-4 receptors, and/or mediate humoral
				or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-13, the inhibition of cytokines released by macrophages. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the
		· · ·		invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., I Biomolecular Screening 4: 193-204 (1999); Rowland et al., "Lymphocytes: a practical in Miraglia et al., Thantar 6: 138-160 (2000); and Obshima et al., Blood 92(9): 3338-3345 (1998), the contents of
				each of which are herein incorporated by reference in its entirety. Human T cells that may be used each of which are herein incorporated by reference in its entirety. Human T cells that may be used
				art. Human T cells assays that your products that mature in the thymus and express a T cell art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell art. The control of the cell mediate humans of the control of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell mediate humans of the cell media
	_			receptor and CD3, CD4, of CD6. These cens increase increase of continuous of continuous increases of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of continuous of
\$65	HUSIG64	1472	Activation of transcription	Assays for the activation of transcription through the API response element are known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies
_			through AP1	and agonists or antagonists of the invention) to modulate growth and other cell functions. Exemplary
			response element in	assays for transcription inrough the Art 1 response element that that be used of fourmery incurred to use API-response element activity of polypeptides of the invention (including antibodies and agonists or
			immune cells	antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1988); Cullen and
			cells).	(1988); Rellahan et al., J Biol Chem 272(49):30806-30811 (1997); Chang et al., Mol Cell Biol
				18(9):4986-4993 (1998); and Fraser et al., Eur J Immunol 29(3):838-844 (1999), the contents of each of
				which are herein incorporated by reference in its clinicity. Arouse 1 coust that its constitution these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used
				according to these assays include the HT2 cell line, which is an IL-2 dependent suspension culture cell
				line that also responds to IL-4.
995	HUSXS50	1473	Activation of	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliteration,
			I-Cell pas of	activation, of apoptosis are well known in the art and man for about of rockings. Inspections of the invention (including antibodies and agonists or antagonists of the invention)
	· ,	_	Signaling	to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays
			Pathway.	for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-

induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Assays for the activation of transcription through the NFKB response element are well-known in the and and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998), Cullen and Malm, Methods in Enzymol 10:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., J Exp Med 82(3):801-810 (1995); and Fraser et al., 20(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. For example, a reporter assay (which measures increases in transcription inducible from a NFkB responsive element in EOL-1 cells) may link the NFKB element to a repeorter gene and binds to the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Bosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.	Assays for measuring calcium flux are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mobilize calcium. Cells normally have very low concentrations of cytosolic calcium compared to much higher extracellular calcium. Extracellular factors can cause an influx of calcium, leading to activation of calcium responsive signaling pathways and alterations in cell functions. Exemplary assays that may be used or routinely modified to measure calcium flux in immune cells (such as monocytes) include assays disclosed in: Chan, CC, et al., J Pharmacol Exp Ther, 269(3):891-896 (1994); Andersson, K, et al., Cytokine, 12(12):1784-1787 (2000); Scully, SP, et al., J Clin Invest, 74(2) 589-599 (1984); and, Sullivan, E, et al., Methods Mol Biol, 114:125-133 (1999), the contents of each of
induced activity of polypeptides of the invention (in invention) include the assays disclosed in Forrer et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis Karin, Nature 410(6824):37-40 (2001); and Cobb M the contents of each of which are herein incorporate used according to these assays are publicly available that may be used according to these assays include suspension-culture cell line with cytotoxic activity.	Assays for the activation of transcr and may be used or routinely modiant matibodies and agonist or antagoni modulate expression of immunomomorphy poppeptides of the invention (include assays disclosed in Berger 216:362-368 (1992); Henthom et a al., Lyannology 90(3):455-460 (19 al., 29(3):838-844 (1999), the contantiety. For example, a reporter a NFkB responsive element in EOLthe NFKB transcription factor, while cells that may be used according to eosinophils. Bosinophils are a type to tissues and mediate the inflamm eosinophil cell line.	Assays for measuring calcium flux assess the ability of polypeptides o invention) to mobilize calcium. Compared to much higher extracell leading to activation of calcium rec Exemplary assays that may be use as monocytes) include assays discl (1994); Andersson, K, et al., Cyto 589-599 (1984); and, Sullivan, E,
	Activation of transcription through NFKB response element in immune cells (such as 'EOL1 cells).	Calcium flux in immune cells (such as monocytes)
	1473	1473
	HUSXS50	HUSXS50
	999	566

				which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include the THP-1 monocyte cell line.
267	нwаль63	1474	Regulation of transcription through the FAS promoter element in hepatocytes	Assays for the regulation of transcription through the FAS promoter element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to activate the FAS promoter element in a reporter construct and to regulate transcription of FAS, a key enzyme for lipogenesis. FAS promoter is regulated by many transcription factors including SREBP. Insulin increases FAS gene transcription in livers of diabetic mice. This stimulation of transcription is also somewhat glucose dependent. Exemplary assays that may be used or routinely modified to test for FAS promoter element activity (in hepatocytes) by polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Xiong, S., et al., Proc Natl Acad Sci U.S.A., 97(8):3948-53 (2000); Roder, K., et al., Eur J Biochem, 260(3):743-51 (1999); Oskouian B, et al., Biochem J, 317 (Pt 1):257-65 (1996); Berger, et al., Gene 66:1-10 (1988); and, Cullen, B., et al., Methods in Enzymol. 216:362-368 (1992), the contents of each of which is herein incorporated by reference in its entirety. Hepatocytes that may be used according to these assays, such as H4IIE cells, are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary hepatocytes that may be used according to these assays include rat liver hepatoma cell line(s) inducible with glucocorticoids, insulin, or cAMP derivatives.
567	HWAAD63	1474	Production of VCAM in endothelial cells (such as human umbilical vein endothelial cells (HUVEC))	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure the upregulation of cell surface VCAM-1 expression in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.
267	HWAAD63	1474	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J,

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				15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells
268	HWABA81	1475	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).
268	HWABA81	1475	Upregulation of CD152 and activation of T cells	CD152 FMAT. CD152 (a.k.a. CTLA.4) expression is restricted to activated T cells. CD152 is a negative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miragia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal approach" Chapter 6:138-160 (2000); Macoy et al., Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human 7 cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human 7 cells are primary human 1ymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.

			through	(including antibodies and agonists or antagonists of the invention) to regulate serum response factors and
				modulate the expression of genes involved in growth and upregulate the function of growth-related genes
			response	in many cell types. Exemplary assays for transcription through the SKE that may be used or routinely
			element in	modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists of
			immune cells	antagonists of the invention) include assays disclosed in Berger et al., Jene 00.1-10 (1996), Cuirch and Maland Makade in Engineer 176, 367, 368 (1997). Henthom et al., Proc Natl Acad Sci USA 85:6342-6346
	·		(sucii as	(1988): Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
			cells).	(1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may
				be used according to these assays are publicly available (e.g., through the ATCC). Exemplary T cells
		_	-	that may be used according to these assays include the NK-YT cell line, which is a human natural killer
				cell line with cytolytic and cytotoxic activity.
570	HWADJ89	1477	Activation of	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in
:			transcription	the art and may be used or routinely modified to assess the ability of polypeptides of the invention
			through	(including antibodies and agonists or antagonists of the invention) to regulate the serum response factors
			serum	and modulate the expression of genes involved in growth. Exemplary assays for transcription through
			response	the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention
			element in	(including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et
			immune cells	al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al.,
	-		(such as T-	Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the
			cells).	content of each of which are herein incorporated by reference in its entirety. T cells that may be used
				according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that
				may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension
				culture of T cells with cytotoxic activity.
270	HWAD189	1477	Stimulation	Assays for measuring secretion of insulin are well-known in the art and may be used or routinely
<u>.</u>			of insulin	modified to assess the ability of polypeptides of the invention (including antibodies and agonists or
			secretion	antagonists of the invention) to stimulate insulin secretion. For example, insulin secretion is measured by
			from	FMAT using anti-rat insulin antibodies. Insulin secretion from pancreatic beta cells is upregulated by
		_	pancreatic	glucose and also by certain proteins/peptides, and disregulation is a key component in diabetes.
			beta cells.	Exemplary assays that may be used or routinely modified to test for stimulation of insulin secretion (from
				pancreatic cells) by polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include assays disclosed in: Ahren, B., et al., Am J Physiol, 277(4 Pt 2):R959-66 (1999); Li,
				M., et al., Endocrinology, 138(9):3735-40 (1997); Kim, K.H., et al., FEBS Lett, 377(2):237-9 (1995);
				and, Miraglia S et. al., Journal of Biomolecular Screening, 4:193-204 (1999), the contents of each of
				which is herein incorporated by reference in its entirety. Pancreatic cells that may be used according to

				these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary pancreatic cells that may be used according to these assays include rat INS-1 cells. INS-1 cells are a semi-adherent cell line established from cells isolated from an X-ray induced rat transplantable
				insulinoma. These cells retain characteristics typical of native pancreatic beta cells including glucose inducible insulin secretion. References: Asfari et al. Endocrinology 1992 130:167.
571	HWBA062	1478	Activation of transcription	Assays for the activation of transcription through the CD28 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including
			through CD28	antibodies and agonists or antagonists of the invention) to stimulate IL-2 expression in T cells. Exemplary assays for transcription through the CD28 response element that may be used or routinely
			response	modified to test CD28-response element activity of polypeptides of the invention (including antibodies
			immune cells	(1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci
			(such as T-	USA 85:6342-6346 (1988); McGuire and Iacobelli, J Immunol 159(3):1319-1327 (1997); Parra et al., J Immunol 166(4):2437-2443 (2001); and Butscher et al., J Biol Chem 3(1):552-560 (1998), the contents
				of each of which are herein incorporated by reference in its entirety. T cells that may be used according
				to these assays are publicly available (e.g., through the ATCC). Exemplary human T cells that may be
				used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4
577	HWBAR14	1479	Production of	TNFa FMAT. Assays for immunomodulatory proteins produced by activated macrophages, T cells,
i 5		:	TNF alpha by	fibroblasts, smooth muscle, and other cell types that exert a wide variety of inflammatory and cytotoxic
			T cells	effects on a variety of cells are well known in the art and may be used or routinely modified to assess the
	145			ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention)
				to mediate immunomodulation, modulate inflammation and cytotoxicity, and mediate numoral and or
				cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate use
				inflammatory or cytotoxic response. Such assays that may be used or routinely modified to test
				immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or
				antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Cnapter 0.139-100 (2000); Verilassen
				Verhasselt et al., J Immunol 158.2919-2925 (1997); and Nardelli et al., J Leukoc Biol 65:822-828 (1999),
				the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may
				be used according to these assays may be isolated using techniques disclosed herein or otherwise known
				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell

			ר
receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Assay that measures the production of the chemokine interleukin-8 (IL-8) from immune cells (such as the EOL-1 human eosinophil cell line) are well known in the art (for example, measurement of IL-8 production by FMAT) and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit. Eosinophils are a type of immune cell important in allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. IL8 is a strong immunomodulator and may have a potential proinflammatory role in immunological diseases and disorders (such as allergy and asthma).	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliteration, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity that may be used or routinely modified to test JNK kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Porrer et al., Biol Chem 379(8-9):1101-110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. Exemplary cells that may be used according to these assays include eosinophils. Eosinophils are important in the late stage of allergic reaction. Moreover, exemplary assays that may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate signal invention (including antibodies and agonists or antagonists of the invention) to modulate signal invention (including antibodies and agonists or antagonists of the invention) to modulate signal oxide ine 21 proliferation, activation, or apoptosis in eosinophils. Clin Exp Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas receptor signaling by nitric oxide in eosinophils." J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "Disruption of fas enceptor signaling by nitric oxide in eosinophils." J Exp Med; Feb 2;187(3):415-25 (1998); J Allergy Clin Immunol; Oct;122(1):20-7 (2000); Hebestreit H, et al., "In vivo resistance to corticosteroids in bro	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 numan mast cell
	Production of IL-8 by immune cells (such as the human EOL-1 eosinophil cells)	Activation of JNK Signaling Pathway in immune cells (such as eosinophils).	Activation of
	1480	1480	1481
	HWBAR88	HWBAR88	HWBCB89
	573	573	574

	<del></del>	
line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmerro et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incoporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.	Assays for the activation of transcription through the NFKB response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immunomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Gnes 15(2):105-117 (1997); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. Exemplary human T cells, such as the MOLT4, that may be used according to these assays are publicly available (e.g., through the ATCC).	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001); and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated.
transcription through GATA-3 response element in immune cells (such as mast cells).	Activation of transcription through NFKB response element in immune cells (such as Teells).	Production of ICAM-1
	1481	1481
	HWBCB89	HWBCB89
	574	574

				Exemplary cells that may be used according to these assays include microvascular endothelial cells
		_		(MVEC).
574	HWBCB89	1481	Activation of transcription	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention of the invention of the invention of a serial presentation response factors and
			through	(including antibodies and agonists of antagonists of the involution) to regulate some continuous modulate the expression of genes involved in growth and upregulate the function of growth-related genes
			response	in many cell types. Exemplary assays for transcription through the SRE that may be used or routinely
			element in	modified to test NKE activity of the polypeptides of the invention (including anticodice and agonism of
	•		(such as	Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346
			natural killer	(1988); Benson et al., J Immunol 153(9):3862-3873 (1994); and Black et al., Virus Genes 12(2):105-117
			cells).	(1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may
			,	be used according to these assays are publicly available (e.g., through the ATCC). Exemplary I cells
				that may be used according to these assays include the NK-YT cell line, which is a human natural killer
			3	Cell life Will PyOly in an Cycoxor activity.  Cell life Will PyOly in an Cycoxor activity. Vinace accay for FRK signal transduction that
575	HWBCF/9	1487	Activation of	Alliase assay. Anniase assays, to coample on the same and any he used or routinely
			Adipocyte	regulate cell proliteration to uniterentation are well known in the area manifordies and aponists or
			EKK	MODIFIED TO ASSESS LIFE ADMILY OF DUTY PERMISSION (INCREMENT) AND AND ASSESS LIFE ADMILY OF DUTY AND ASSESS LIFE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE ADMILY OF THE A
_			Signaling	antagonists of the invention) to promote of illinoit cell promote arion, are an experienced to the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of
			Pathway	Exemplary assays for ERK kinase activity that may be used or routinely modified to test EKK kinase-
				induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Le
				Marchand-Brustel Y. Exp Clin Endocrinol Diabetes 107(2):126-132 (1999); Kyriakis JM, Biochem Soc
				Symp 64:29 48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys
				Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in
				its entirety. Mouse adipocyte cells that may be used according to these assays are publicly available
				(e.g., through the ATCC). Exemplary mouse adipocyte cells that may be used according to these assays
				include 3T3-L1 cells. 3T3-L1 is an adherent mouse preadipocyte cell line that is a continuous substrain
				of 3T3 fibroblast cells developed through clonal isolation and undergo a pre-adipocyte to adipose-like
				conversion under appropriate differentiation conditions known in the art.
575	HWRCP79	1482	Production of	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or
?	:		IL-10 and	routinely modified to assess the ability of polypeptides of the invention (including antibodies and
			activation of	agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of
			T-cells.	T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides

576	HWBDP28	1483	Activation of transcription through NFAT response element in immune cells (such as mast cells).	and antibodies of the invention (including agonists or antagonists of the invention) to modulate LI-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokimes in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirely.  Exemplary cells that may be used according to these assays include Th2 cells. LI 0 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete LI.4, Li.0, Li.3, L.5 and Li.6. Factors that induce differentiation and activation of Th2 cells are a generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes analysis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.  This reporter assay measures activation of the NFAT signaling pathway in HMC-1 human mast cell line. This reporter assay measures activation of the NFAT in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the Nuclear Factor of Activated T cells (NFAT) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFAT response element and mannaly assays for transcription through the NFAT response element that may be used or routinely modified to test NFAT-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Prox Med 188:527-537 (1998), thenthom et al., Prox Med 188:527-537 (1998), the connents of each of
576	HWBDP28	1483	Production of ICAM-1	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Takacs P, et al, FASEB J, 15(2):279-281 (2001), and, Miyamoto K, et al., Am J Pathol, 156(5):1733-1739 (2000), the contents of

each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include microvascular endothelial cells (MVEC).		
these as Exempl	of HLA-DR Deregul and arthritis activation of express T cells may be antibod mediate evaluate cells. S polypeg for exa Rowlar Immun and Zie the con be used in the a receptor	Upregulation CD711 of CD71 and essenti activation of Assays T cells of the i activat immun activat activat inmun activat inmun activat
	1484	1485
	НWВЕМ18	HWBFE57
	277	578

				et al., Ann Rheum Dis 52(6):457-460 (1993), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using
				techniques disclosed herein or otherwise known in the art. Human T cells are primary human
				lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These
		_		immunomodulatory factors.
578	HWBFE57	1485	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for
				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the
				activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory
		-		activity of polypeptides of the invention (including antibodies and agonists or antagonists of the
				invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-
				204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et
				al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999);
				and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein
				incorporated by reference in its entirety. Human T cells that may be used according to these assays may
				be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary
				human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8.
				These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
				responsiveness to immunomodulatory factors.
579	HWDAC39	1486	Upregulation	CD152 FMAT. CD152 (a.k.a. CTLA-4) expression is restricted to activated T cells. CD152 is a
			of CD152	negative regulator of T cell proliferation. Reduced CD152 expression has been linked to
			and	hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired
			activation of	immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell
			T cells	homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and
				may be used or routinely modified to assess the ability of polypeptides of the invention (including
				antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T
				cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for

				immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 11(3):294-300 (1999); and Saito T, Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance
580	нwDAH38	1487	Activation of transcription through serum response element in immune cells (such as Teells).	Assays for the activation of transcription through the Serum Response Element (SRE) are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate the serum response factors and modulate the expression of genes involved in growth. Exemplary assays for transcription through the SRE that may be used or routinely modified to test SRE activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); and Black et al., Virus Genes 12(2):105-117 (1997), the content of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension culture of T cells with cytotoxic activity.
581	НWНGР71	1488	Activation of transcription through STAT6 response element in immune cells (such as T-cells).	Assays for the activation of transcription through the Signal Transducers and Activators of Transcription (STAT6) response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate STAT6 transcription factors and modulate the expression of multiple genes. Exemplary assays for transcription through the STAT6 response element that may be used or routinely modified to test STAT6 response element activity of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Georas et al., Blood 92(12):4529-4538 (1998); Moffatt et al., Transplantation 69(7):1521-1523 (2000); Curiel et al., Eur J Immunol 27(8):1982-1987 (1997); and Masuda et al., J Biol

				Chem 275(38):29331-29337 (2000), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the
				ATCC). Exemplary T cells that may be used according to these assays include the SUPT cell line, which is a suspension culture of IL-2 and IL-4 responsive T cells.
582	нwнGQ49	1489	Activation of transcription through cAMP response element in immune cells (such as Teells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
283	HWHGU54	1490	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
583	HWHGU54	1490	Production of IL-8 by by endothelial cells (such as	Assays measuring production of IL-8 are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate production and/or secretion of IL-8. For example, FMAT may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or

			Human Umbilical	antagonists of the invention) to regulate production and/or secretion of IL-8 from endothelial cells (such as human umbilical vein endothelial cells (HUVEC)). HUVECs are endothelial cells which line venous
			Cord	blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular
			Endothelial	permeability, vascular tone, and immune cell extravasation. Endothelial cells play a pivotal role in the
			Sels).	initiation and perpetuation of initiationation and secretion of the original pray all important fore in recruitment and activation of immune cells such as neutrophils, macrophages, and lymphocytes.
584	HWHGZ51	1491	Activation of	Assays for the activation of transcription through the Gamma Interferon Activation Site (GAS) response
			transcription	element are well-known in the art and may be used or routinely modified to assess the ability of
			through GAS	polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to
			response	regulate STAT transcription factors and modulate gene expression involved in a wide variety of cell
			element in	functions. Exemplary assays for transcription through the GAS response element that may be used or
			immune cells	routinely modified to test GAS-response element activity of polypeptides of the invention (including
			(such as T-	antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene
			cells).	66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl
				Acad Sci USA 85:6342-6346 (1988); Matikainen et al., Blood 93(6):1980-1991 (1999); and Henttinen et
				al., J Immunol 155(10):4582-4587 (1995), the contents of each of which are herein incorporated by
				reference in its entirety. Exemplary mouse T cells that may be used according to these assays are
				publicly available (e.g., through the ATCC). Exemplary T cells that may be used according to these
				assays include the CTLL cell line, which is a suspension culture of IL-2 dependent cytotoxic T cells.
584	HWHGZ51	1491	Production of	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and
			MCP-1	act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be
				used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and
				agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and
				modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate
				the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the
				activation of monocytes and T cells. Such assays that may be used or routinely modified to test
				immunomodulatory and diffferentiation activity of polypeptides of the invention (including antibodies
				and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular
				Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160
				(2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol
				158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety.
				Human dendritic cells that may be used according to these assays may be isolated using techniques
				disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in
				suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell

				proliteration and functional activities.
584 4	HWHGZ51	1491	Activation of transcription through NFKB response element in immune cells (such as EOL1 cells).	Assays for the activation of transcription through the NFKB response element are well-known in the and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate NFKB transcription factors and modulate expression of immuniomodulatory genes. Exemplary assays for transcription through the NFKB response element that may be used or rountinely modified to test NFKB-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Valle Blazquez et al., Immunology 90(3):455-460 (1997); Aramburau et al., 1 Exp Med 82(3):801-810 (1995); and Fraser et al., 29(3):838-844 (1999), the contents of each of which are herein incorporated by reference in its entirety. For example, a reporter assay (which measures increases in transcription inducible from a NFKB responsive element in EOL-1 cells) may link the NFKB element to a repeorter gene and binds to the NFKB transcription factor, which is upregulated by cytokines and other factors. Exemplary immune cells that may be used according to these assays include eosinophils such as the human EOL-1 cell line of eosinophils. Eosinophils are a type of immune cell important in the allergic responses; they are recruited to tissues and mediate the inflammtory response of late stage allergic reaction. Eol-1 is a human eosinophil cell line.
584	HWHGZ51	1491	Upregulation of HLA-DR and activation of T cells	HLA-DR FMAT. MHC class II is essential for correct presentation of antigen to CD4+ T cells. Deregulation of MHC class II has been associated with autoimmune diseases (e.g., diabetes, rheumatoid arthritis, systemic lupus erythematosis, and multiple sclerosis). Assays for immunomodulatory proteins expressed on MHC class II expressing T cells and antigen presenting cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of MHC class II products, such as HLA-DR antigens, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999):  Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Lamour et al., Clin Exp Immunol 89(2):217-222 (1989); Hurme and Sihvola, Immunol Lett 20(3):217-222 (1989); Gansbacher and Zier, Cell Immunol 117(1):22-34 (1988); and Itoh et al., J Histochem Cytochem 40(11):1675-1683, the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known

				in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be propositioned to enhance resonationers to immunomodulatory factors.
584	HWHGZ51	1491	Upregulation of CD152 and activation of T cells	regative regulator of T cell proliferation. Reduced CD152 expression has been linked to hyperproliferative and autoimmune diseases. Overexpression of CD152 may lead to impaired immunoresponses. Assays for immunomodulatory proteins important in the maintenance of T cell homeostasis and expressed almost exclusively on CD4+ and CD8+ T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to modulate the activation of T cells, maintain T cell homeostasis, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the upregulation of cell surface markers, such as CD152, and the activation of T cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include, for example, the assays disclosed in Miraglia et al., I Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); McCoy et al., Immunol Cell Biol 77(1):1-10 (1999); Oostervegal et al., Curr Opin Immunol 10(3):313-321 (1998), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T Cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.
585	HWHHL34	1492	Activation of transcription through cAMP response element in immune cells (such as T-cells).	Assays for the activation of transcription through the cAMP response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to increase cAMP and regulate CREB transcription factors, and modulate expression of genes involved in a wide variety of cell functions. Exemplary assays for transcription through the cAMP response element that may be used or routinely modified to test cAMP-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthom et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Black et al., Virus Genes 15(2):105-117 (1997); and Belkowski et al., J Immunol 161(2):659-665 (1998), the contents of each of which are herein incorporated by reference in its part may be used according to these assays are publicly available (e.g., through the

				ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is a suspension culture of II2 dependent cytotoxic T cells.
585	HWHHL34	1492	Activation of transcription through GATA-3 response element in immune cells (such as mast cells).	This reporter assay measures activation of the GATA-3 signaling pathway in HMC-1 human mast cell line. Activation of GATA-3 in mast cells has been linked to cytokine and chemokine production. Assays for the activation of transcription through the GATA3 response element are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate GATA3 transcription factors and modulate expression of mast cell genes important for immune response development. Exemplary assays for transcription through the GATA3 response element that may be used or routinely modified to test GATA3-response element activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Berger et al., Gene 66:1-10 (1998); Cullen and Malm, Methods in Enzymol 216:362-368 (1992); Henthorn et al., Proc Natl Acad Sci USA 85:6342-6346 (1988); Flavell et al., Cold Spring Harb Symp Quant Biol 64:563-571 (1999); Rodriguez-Palmero et al., Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.
286	нwнqsss	1493	Production of IL-13 and activation of T-cells.	Assays for production of IL-13 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-13 and/or activation of T-cells. Exemplary assays for IL-13 production that may be used or routinely modified to test activity of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) include, for example, assays such as disclosed and/or cited in: Grunig, G. et al., "Requirement for IL-13 independently of IL-4 in Experimental asthma" Science;282: 2261-2263 (1998), and Wills-Karp M, et al., "Interleukin-13: central mediator of allergic asthma" Science; 282: 2258-2261 (1998); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL.13, a Th2 type cytokine, is a potent stimulus for mucus production, airway hyper-responsiveness and allergic asthma. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated in in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.

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Production of IL.4 FMAT. Assays for immunomodulatory proteins secreted by TH2 cells that stimulate B cells, T cells, macrophages and mast cells and promote polarization of CD4+ cells into TH2 cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, stimulate immune cells, modulate immune cell polarization, and/or mediate humoral or cell-mediated immunity. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL.4, and the stimulation of immune cells, such as B cells, T cells macrophages and mast cells. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Gonzalez et al., J Clin Lab Anal 8(5):277-281 (1904); Yssel et al., Res Immunol 144(8):610-616 (1993); Bagley et al., Nat Immunol 1(3):257-261 (2000); and van der Graaff et al., Rehumatology (Oxford) 38(3):214-220 (1999), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.	Kinase assay. JNK and p38 kinase assays for signal transduction that regulate cell proliferation, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit immune cell (e.g. T-cell) proliferation, activation, and apoptosis. Exemplary assays for JNK and p38 kinase activity that may be used or routinely modified to test JNK and p38 kinase-induced activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Forrer et al., Biol Chem 379(8-9):1101-1110 (1998); Gupta et al., Exp Cell Res 247(2): 495-504 (1999); Kyriakis JM, Biochem Soc Symp 64:29-48 (1999); Chang and Karin, Nature 410(6824):37-40 (2001); and Cobb MH, Prog Biophys Mol Biol 71(3-4):479-500 (1999); the contents of each of which are herein incorporated by reference in its entirety. T cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary mouse T cells that may be used according to these assays include the CTLL cell line, which is an IL-2 dependent suspension-culture cell line with cytotoxic activity.	Assays for measuring expression of VCAM are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or an accounted of the invention) to regulate VCAM expression. For example, FMAT may be used to meaure
Production of IL-4	Activation of T-Cell p38 or JNK Signaling Pathway.	Production of VCAM in
1494	1495	1495
нwьеv32	нwлн65	HWLIH65
282	288	588

the upregulation of cell surface VCAM-1 expresssion in endothelial cells. Endothelial cells are cells that line blood vessels, and are involved in functions that include, but are not limited to, angiogenesis, vascular permeability, vascular tone, and immune cell extravasation. Exemplary endothelial cells that may be used according to these assays include human umbilical vein endothelial cells (HUVEC), which are available from commercial sources. The expression of VCAM (CD106), a membrane-associated protein, can be upregulated by cytokines or other factors, and contributes to the extravasation of lymphocytes, leucocytes and other immune cells from blood vessels; thus VCAM expression plays a role in promoting immune and inflammatory responses.	Assays for measuring expression of ICAM-1 are well-known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to regulate ICAM-1 expression. Exemplary assays that may be used or routinely modified to measure ICAM-1 expression include assays disclosed in: Rolfe BE, et al., Atherosclerosis, 149(1):99-110 (2000); Panettieri RA Jr, et al., J Immunol, 154(5):2358-2365 (1995); and, Grunstein MM, et al., Am J Physiol Lung Cell Mol Physiol, 278(6):L1154-L1163 (2000), the contents of each of which is herein incorporated by reference in its entirety. Cells that may be used according to these assays are publicly available (e.g., through the ATCC) and/or may be routinely generated. Exemplary cells that may be used according to these assays include Aortic Smooth Muscle Cells (AOSMC); such as bovine AOSMC.	MCP-1 FMAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4: 193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6: 138-160 (2000); Satthaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell proliferation and functional activities.
cells (such as human umbilical vein endothelial cells (HUVEC))	Production of ICAM-1	Production of MCP-1
	1496	1497
	HYAAJ71	HYBAR01
	589	290

290	HYBAR01	1497	1497 Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety.  Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation and activation of Th2 cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord those
591	HYBBE75	1498	Production of IL-10 and activation of T-cells.	Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL-10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL-10, IL-13, IL-5 and IL-6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.
592	HAPSA79	1499	Activation of JNK Signaling Pathway in	Kinase assay. JNK kinase assays for signal transduction that regulate cell proliteration, activation, or apoptosis are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to promote or inhibit cell proliferation, activation, and apoptosis. Exemplary assays for JNK kinase activity

Table 1E: Polynucleotides encoding polypeptides of the present invention can be used in assays to test for one or more biological activities. One such biological activity which may be tested includes the ability of polynucleotides and polypeptides of the invention to stimulate upregulation or down-regulation of expression of particular genes and proteins. Hence, if polynucleotides and polypeptides of the present invention exhibit activity in altering particular gene and protein expression patterns, it is likely that these polynucleotides and polypeptides of the present invention may be involved in, or capable of effecting changes in, diseases associated with the altered gene and protein expression profiles. Hence, polynucleotides, polypeptides, or antibodies of the present invention could be used to treat said associated diseases.

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TaqMan® assays may be performed to assess the ability of polynucleotides (and polypeptides they encode) to alter the expression pattern of particular "target" genes. TaqMan® reactions are performed to evaluate the ability of a test agent to induce or repress expression of specific genes in different cell types. TaqMan® gene expression quantification assays ("TaqMan® assays") are well known to, and routinely performed by, those of ordinary skill in the art. TaqMan® assays are performed in a two step reverse transcription / polymerase chain reaction (RT-PCR). In the first (RT) step, cDNA is reverse transcribed from total RNA samples using random hexamer primers. In the second (PCR) step, PCR products are synthesized from the cDNA using gene specific primers.

To quantify gene expression the Taqman® PCR reaction exploits the 5' nuclease activity of AmpliTaq Gold® DNA Polymerase to cleave a Taqman® probe (distinct from the primers) during PCR. The Taqman® probe contains a reporter dye at the 5'-end of the probe and a quencher dye at the 3' end of the probe. When the probe is intact, the proximity of the reporter dye to the quencher dye results in suppression of the reporter fluorescence. During PCR, if the target of interest is present, the probe specifically anneals between the forward and reverse primer sites. AmpliTaq Fold DNA Polymerase then cleaves the probe between the reporter and quencher when the probe hybridizes to the target, resulting in increased fluorescence of the reporter (see Figure 2). Accumulation of PCR products is detected directly by monitoring the increase in fluorescence of the reporter dye.

After the probe fragments are displaced from the target, polymerization of the strand continues. The 3'-end of the probe is blocked to prevent extension of the probe during PCR. This process occurs in every cycle and does not interfere with the exponential accumulation of product. The increase in fluorescence signal is detected only if the target sequence is complementary to the probe and is amplified during PCR. Because of these requirements, any nonspecific amplification is not detected.

For test sample preparation, vector controls or constructs containing the coding sequence for the gene of interest are transfected into cells, such as for example 293T cells, and supernatants collected after 48 hours. For cell treatment and RNA isolation, multiple primary human cells or human cell lines are used; such cells may include but are not limited to, Normal Human Dermal Fibroblasts, Aortic Smooth Muscle, Human Umbilical Vein Endothelial Cells, HepG2, Daudi, Jurkat, U937, Caco, and THP-1 cell lines. Cells are plated in growth media and growth is arrested by culturing without media change for 3 days, or by switching cells to low serum media and incubating overnight. Cells are treated for 1, 6, or 24 hours with either vector control supernatant or sample supernatant (or purified/partially purified protein preparations in buffer). Total RNA is isolated; for example, by using Trizol extraction or by using the Ambion RNAqueous(TM)-4PCR RNA isolation system. Expression levels of multiple genes are analyzed using TAQMAN, and expression in the test sample is compared to control vector samples to identify genes induced or repressed. Each of the above described techniques are well known to, and routinely performed by, those of ordinary skill in the art.

Table 1E indicates particular disease classes and preferred indications for which polynucleotides, polypeptides, or antibodies of the present invention may be used in detecting, diagnosing, preventing, treating and/or ameliorating said diseases and disorders based on "target" gene expression patterns which may be up- or down-regulated by polynucleotides (and the encoded polypeptides) corresponding to each indicated cDNA Clone ID (shown in Table 1E, Column 2).

Thus, in preferred embodiments, the present invention encompasses a method of detecting, diagnosing, preventing, treating, and/or ameliorating a disease or disorder listed in the "Disease Class" and/or "Preferred Indication" columns of Table 1E; comprising administering to a patient in which such detection, diagnosis, prevention, or treatment is desired a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof) in an amount effective to detect, diagnose, prevent, treat, or ameliorate the disease or disorder. The first and second columns of Table 1D show the "Gene No." and "cDNA Clone ID No.", respectively, indicating certain nucleic acids and proteins (or antibodies against the same) of the invention (including polynucleotide, polypeptide, and antibody fragments or variants thereof) that may be used in detecting, diagnosing, preventing, treating, or ameliorating the disease(s) or disorder(s) indicated in the corresponding row in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

In another embodiment, the present invention also encompasses methods of detecting, diagnosing, preventing, treating, or ameliorating a disease or disorder listed in the "Disease Class" or "Preferred Indication" Columns of Table 1E; comprising administering to a patient combinations of the proteins, nucleic acids, or antibodies of the invention (or fragments or variants thereof), sharing similar indications as shown in the corresponding rows in the "Disease Class" or "Preferred Indication" Columns of Table 1E.

The "Disease Class" Column of Table 1E provides a categorized descriptive heading for diseases, disorders, and/or conditions (more fully described below) that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

The "Preferred Indication" Column of Table 1E describes diseases, disorders, and/or conditions that may be detected, diagnosed, prevented, treated, or ameliorated by a protein, nucleic acid, or antibody of the invention (or fragment or variant thereof).

The "Cell Line" and "Exemplary Targets" Columns of Table 1E indicate particular cell lines and target genes, respectively, which may show altered gene expression patterns (i.e., up- or down-regulation of the indicated target gene) in Taqman assays, performed as described above, utilizing polynucleotides of the cDNA Clone ID shown in the corresponding row. Alteration of expression patterns of the indicated "Exemplary Target" genes is correlated with a particular "Disease Class" and/or "Preferred Indication" as shown in the corresponding row under the respective column headings.

The "Exemplary Accessions" Column indicates GenBank Accessions (available online through the National Center for Biotechnology Information (NCBI) at <a href="http://www.ncbi.nlm.nih.gov/">http://www.ncbi.nlm.nih.gov/</a>) which correspond to the "Exemplary Targets" shown in the adjacent row.

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The recitation of "Cancer" in the "Disease Class" Column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof) may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate neoplastic diseases and/or disorders (e.g., leukemias, cancers, etc., as described below under "Hyperproliferative Disorders").

The recitation of "Immune" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, prevent, treat, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders (e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

The recitation of "Angiogenesis" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), diseases and/or disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders"), diseases and/or disorders involving cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level"),

diseases and/or disorders involving angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity"), to promote or inhibit cell or tissue regeneration (e.g., as described below under "Regeneration"), or to promote wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

The recitation of "Diabetes" in the "Disease Class" column indicates that the corresponding nucleic acid and protein, or antibody against the same, of the invention (or fragment or variant thereof), may be used for example, to detect, diagnose, treat, prevent, and/or ameliorate diabetes (including diabetes mellitus types I and II), as well as diseases and/or disorders associated with, or consequential to, diabetes (e.g. as described below under "Endocrine Disorders," "Renal Disorders," and "Gastrointestinal Disorders").

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Table 1E	31.					
Gen	CDNA	Disease	Preferred Indications	Cell Line	Ë	Exemplary
No.	Clone	Class			Targets	Accessions
15	HAGDG59	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune	AOSMC	CIS3 GATA1 IL1B	gb AB006967  AB006967 gb X17254 HS
			disorders involving muscle tissues and the cardiovascular system (e.g. heart, lungs, circulatory system)). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly			ERYF1 gb X02532 HSI L1BR
			including, but not limited to, immune disorders involving muscle tissue or the cardiovascular system). (AOSMC cells are human aortic smooth muscle cells).			
15	HAGDG59	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (narticularly including but not limited to immune	Caco-2	TNF	gb AJ270944 H SA27094
			disorders involving the cells of the gastrointestinal tract). Highly preferred embodiments of the invention include methods of preventing, detecting,			
			diagnosing, treating and/or ameliorating disorders of the infinite system (particularly including, but not limited to, immune disorders involving			
<del></del>			cells of the gastrointestinal tract). (The Caco-2 cell line is a human colorectal adenocarcinoma cell line available through the ATCC as cell line animber HTB.17)			
15	HAGDG59	Immune	Highly preferred indications include immunological disorders such as	HEK293	GATA3	gb X55037 HS
			described herein under the heading "Immune Activity" and/or Blood- Related Disorders" (particularly including, but not limited to, immune			CATAS
			disorders involving epithelial cells or the renal system). Highly preferred			
			diagnosing, treating and/or ameliorating disorders of the immune system			
			(particularly including, but not limited to, immune disorders involving			
			epithelial cells or the renal system). (The 293 cell line is a human			
			embryonal kidney epithelial cell line available through the ATCC as cell			
	_		line ildinoci Civilia).			

HUVEC CD30 HLA-c IL5 of TNF	Jurkat Rag1 TNF g	Liver LTBR gb AK027080  - AK027080 - AK027080	SK-N-MC CIS3 gb AB006967  neuroblast GATA1 AB006967 oma HLA-c gb X17254 HS em g the ell
Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving endothelial cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving endothelial cells). (HUVEC cells are human umbilical vein endothelial cells).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving T-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving T-cells). (The Jurkat cell line is a human T lymphocyte cell line available through the ATCC as cell line number TIB-152).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving cells of the hepatic system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the hepatic system).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the central nervous system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the central nervous sytem). (The SK-N-MC neuroblastoma cell line is a cell
Immune	Immune	Immune	Immune
HAGDG59	HAGDG59	HAGDG59	HAGDG59
15	15	15	15

			cell line number HTB-10).			
15	HAGDG59	Immune	ns include immunological disorders such as heading "Immune Activity" and/or "Bloodularly including, but not limited to, immune s). Highly preferred embodiments of the of preventing, detecting, diagnosing, treating ers of the immune system (particularly to, immune disorders involving T-cells).	03/31/00	CD40 Granzyme B	gb AJ300189 H SA30018 gb J04071 HU MCSE
15	HAGDG59	Immune	nas ood- une f the aating tes).	U937	CD69 TNF	gb Z22576 HS CD69GNA gb A1270944 H SA27094
08	HCHNF25	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the cells of the gastrointestinal tract). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the gastrointestinal tract). (The Caco-2 cell line is a human colorectal adenocarcinoma cell line available through the ATCC as cell line number HTB-37).	Caco-2	CCR4 CIS3 ICAM VCAM	gb AB023888  AB023888 gb AB006967  AB006967 gb X06990 HSI CAM1 gb A30922 A30 922
08	HCHNF25	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the B-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving B-cells). (The	Daudi	Ragl Rag2	gb M29474 HU MRAG1 gb AY011962  AY011962

		Daudi cell line is a human B lymphoblast cell line available through the ATCC as cell line number CCL-213).			
Immune Highly preferr described here Related Disord disorders involute including, but cells). (HUVE	Highly preferr described here Related Disord disorders involute invention i treating and/or including, but cells). (HUVE	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving endothelial cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving endothelial cells). (HUVEC cells are human umbilical vein endothelial cells).	ночес	CD25 TNF	gb X03137 HSI L2RG7 gb AJ270944 H SA27094
Immune Highly prefer described herr Related Disordisorders invention including, but Jurkat cell lin ATCC as cell	Highly prefer described here Related Disor disorders invo invention inclandor amelio including, but Jurkat cell lin ATCC as cell	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving T-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving T-cells). (The Jurkat cell line is a human T lymphocyte cell line available through the ATCC as cell line number TB-152).	Jurkat	CD28 IL2 VCAM	gb AF222342 A F222342 gb X61155 HS ARTIL.2 gb A30922 A30 922
Immune Highly preferred indications described herein under the handle Related Disorders" (particul disorders involving cells of embodiments of the inventicularly including, but to cells of the hepatic system).	Highly preferr described here Related Disord disorders invol embodiments of diagnosing, tre (particularly in cells of the her	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving cells of the hepatic system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the hepatic system).	Liver	CCR4 CD28 CXCR3 Rag2	gb AB023888  AB023888 gb AF222342 A F222342 gb Z79783 HS CKRL2 gb AY011962  AY011962
Immune Highly preferre described herei Related Disord disorders involinvention inclu and/or ameliora including, but 1	Highly preferre described herei Related Disord disorders involinvention incluandor ameliora including, but t	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the skin). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the skin).	NHDF	CIS3 Rag1	gb AB006967  AB006967 gb M29474 HU MRAG1

			(NHDF cells are normal human dermal fibroblasts).			
œ	HCHINF25	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-	THP1	CD28 CIS3	gb AF222342 A F222342
			Related Disorders" (particularly including, but not limited to, immune disorders involving monocytes). Highly preferred embodiments of the		CXCR3	gb AB006967  AB006967
			invention include methods of preventing, detecting, diagnosing, treating			gb Z79783 HS
		-	and/or ameliorating disorders of the immune system (particularly including but not limited to, immune disorders involving monocytes).			CKRL2
			(The THP1 cell line is a human monocyte cell line available through the			
			ATCC as cell line number TB-202).			
8	HCHNF25	Immune	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-	U937	TNF	gb AJ270944 H SA27094
			Related Disorders" (particularly including, but not limited to, immune			gb A30922 A30
			disorders involving monocytes). Highly preferred embodiments of the			922
			invention include methods of preventing, detecting, diagnosing, treating			
			and/or ameliorating disorders of the immune system (particularly			
			including, but not limited to, immune disorders involving monocytes).			
			(The U937 cell line is a human monocyte cell line available through the			
	-		ATCC as cell line number CRL-1593.2).		<u> </u>	100000000000000000000000000000000000000
S	HDPBQ71	Immune	Highly preterred indications include immunological disorders such as	AOSMC	ILIB	gplx02332jHSI
			described herein under the heading "Immune Activity" and/or "Blood-		VCAM	LIBR
		_	Related Disorders" (particularly including, but not limited to, immune			gb A30922 A30
			disorders involving muscle tissues and the cardiovascular system (e.g.			922
			heart, lungs, circulatory system)). Highly preterred embodiments of the			
			invention include methods of preventing, detecting, diagnosing, treating			
			and/or ameliorating disorders of the immune system (particularly			
			including, but not limited to, immune disorders involving muscle dissue or			
			muscle cells).			
55	HDPBQ71	Immune	Highly preferred indications include immunological disorders such as	Daudi	c-maf	gb AF055377 A
			described herein under the heading "Immune Activity" and/or "Blood-		CD25	F055377
			Related Disorders" (particularly including, but not limited to, immune		CXCR3	gb X03137 HSI
			disorders involving the B-cells). Highly preferred embodiments of the		Granzyme	L2RG7
			invention include methods of preventing, detecting, diagnosing, treating		В	gb Z79783 HS

CKRL2 gb/104071/HU MCSE gb/X06990/HSI CAM1	gb AB023888  AB023888 gb AJ270944 H SA27094	gb AY011962  AY011962 gb A30922 A30 922	gb AF055377 A F055377 gb Z22576 HS CD69GNA gb AJ270944 H SA27094	gb A30922 A30 922
ICAM	CCR4	Rag2 VCAM	c-maf CD69 TNF	VCAM
	HEK293	HUVEC	Jurkat	Liver
and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving B-cells). (The Daudi cell line is a human B lymphoblast cell line available through the ATCC as cell line number CCL-213).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). (The 293 cell line is a human embryonal kidney epithelial cell line available through the ATCC as cell line number CRI1573).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving endothelial cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving endothelial cells).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving T-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving T-cells). (The Jurkat cell line is a human T lymphocyte cell line available through the ATCC as cell line number TIB-152).	<del></del>
	Immune	Immune	Immune	Immune
	HDPBQ71	нррвQ71	норв Q71	нрРВQ71
	105	105	105	105

	gb AK027080  AK027080 gb M29474 HU MRAG1	gb AJ300189 H SA30018 gb AJ270944 H SA27094	gb Z22576 HS CD69GNA gb AF316875 A F316875 gb Y04071 HU MCSE gb X06990 HSI CAM1 gb X87308 HS RNAIG
	HLA∼ LTBR Ragi	CD40 TNF	CD69 CTLA4 Granzyme B ICAM IFNg IL5 LTBR Rag2
	NHDF	SK-N-MC neuroblast oma	T cell
Related Disorders" (particularly including, but not limited to, immune disorders involving cells of the hepatic system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the hepatic system).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the skin). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the skin). (NHDF cells are normal human dermal fibroblasts).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the central nervous system). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving the central nervous sytem). (The SK-N-MC neuroblastoma cell line is a cell line derived from human brain tissue and is available through the ATCC as cell line number HTB-10).	Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving T-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving T-cells).
	Іттипе	Immune	Immune
	HDPBQ71	HDPBQ71	ногвол1
	105	105	105

						gb X12705 HS RCDFIA
						gb AK027080
						AK027080
						gb AY011962  AY011962
-	1.Coaduri		Wishly are ferred indications include immunological disorders such as	THPI	CCR3	gb AB023887
	ויאפיטים	DIMINITE OF	described berein under the heading "Immine Activity" and/or "Blood-		CD30	AB023887
			Related Disorders" (particularly including, but not limited to, immune		91	
			disorders involving monocytes). Highly preferred embodiments of the		Rag2	gb X04403 HS2
			invention include methods of preventing, detecting, diagnosing, treating		VCAM	6KDAR
			and/or ameliorating disorders of the immune system (particularly			gb AY011962
			including, but not limited to, immune disorders involving monocytes).			AY011962
_			(The THPI cell line is a human monocyte cell line available through the			gb A30922 A30
			ATCC as cell line number TIB-202).			922
105	HDPBO71	Immune	Highly preferred indications include immunological disorders such as	U937	CD69	gb Z22576 HS
			described herein under the heading "Immune Activity" and/or "Blood-		TNF	CD69GNA
			Related Disorders" (particularly including, but not limited to, immune		VCAM	gb AJ270944 H
	-		disorders involving monocytes). Highly preferred embodiments of the			SA27094
			invention include methods of preventing, detecting, diagnosing, treating			gb A30922 A30
			and/or ameliorating disorders of the immune system (particularly			922
			including, but not limited to, immune disorders involving monocytes).			
-	•		(The U937 cell line is a human monocyte cell line available through the			
			ATCC as cell line number CRL-1593.2).			3
184	HFCCQ50	Immune	Highly preferred indications include immunological disorders such as	TF-1	CD40	gb AJ300189 H
	,		described herein under the heading "Immune Activity" and/or "Blood-		CD69	SA30018
			Related Disorders" (particularly including, but not limited to, immune			gb Z22576 HS
			disorders involving erythrocytes). Highly preferred embodiments of the			CD69GNA
			invention include methods of preventing, detecting, diagnosing, treating			
			and/or ameliorating disorders of the immune system (particularly			
			including, but not limited to, immune disorders involving erythrocytes).			
			(The TF-1 cell line is a human erythroblast cell line available through the			
			ATCC as cell line number CRL-2003).			
184	HFCCO50	Immune	Immune   Highly preferred indications include immunological disorders such as	U937	ICAM	gb X06990 HSI
- 1	2252					

		described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving monocytes). Highly preferred embodiments of the		IRF1 LTBR	CAM1 gb X14454 HS1 RF1
		invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving monocytes). (The U937 cell line is a human monocyte cell line available through the ATCC as cell line number CRL-1593.2).			AK027080
12	Immune		TF-1	CD40 IL1B LTBR	gb AJ300189 H SA30018 gb X02532 HSI
		ansorders involving erydirocytes). Figury prediction canonically a discontinuous of the invention include methods of preventing, detecting, diagnosting, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving erythrocytes). (The TF-1 cell line is a human erythroblast cell line available through the ATCC as cell line number (RI-2003).			gb AK027080  AK027080
5	Immune		U937	CTLA4 ICAM LTBR TNF	gb AF316875 A F316875 gb X06990 HSI CAM1
		invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving monocytes). (The U937 cell line is a human monocyte cell line available through the ATCC as cell line number CRL-1593.2).			gb AKU2/U8U  AK027080 gb AJ270944 H SAZ7094
12	Immune	nunological disorders such as nune Activity" and/or "Blood-	Adipocyte ICAM s-3/12/01 116	ICAM 116	gb X06990 HSI   CAM1
		Related Disorders" (particularly including, but not limited to, immune disorders involving adipocytes). Highly preferred embodiments of the		Ragl	gb X04403 HS2 6KDAR
		invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving adipocytes).			gb M29474 HU MRAG1
티티	in e		AOSMC	CD30	

described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving muscle tissues and the cardiovascular system (e.g. heart, lungs, circulatory system)). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliocating disorders of the immune system (particularly
including, but not limited to, immune disorders involving muscle tissue or the cardiovascular system). (AOSMC cells are human aortic smooth muscle cells).
Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the cells of the gastrointestinal tract). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving cells of the gastrointestinal tract). (The Caco-2 cell line is a human colorectal adenocarcinoma cell line available through the ATCC as cell line number HTB-37).
Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving the B-cells). Highly preferred embodiments of the invention include methods of preventing, detecting, diagnosing, treating and/or ameliorating disorders of the immune system (particularly including, but not limited to, immune disorders involving B-cells). (The Daudi cell line is a human B lymphoblast cell line available through the ATCC as cell line number CCL-213).
Highly preferred indications include immunological disorders such as described herein under the heading "Immune Activity" and/or "Blood-Related Disorders" (particularly including, but not limited to, immune disorders involving epithelial cells or the renal system). Highly preferred embodiments of the invention include methods of preventing, detecting,

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